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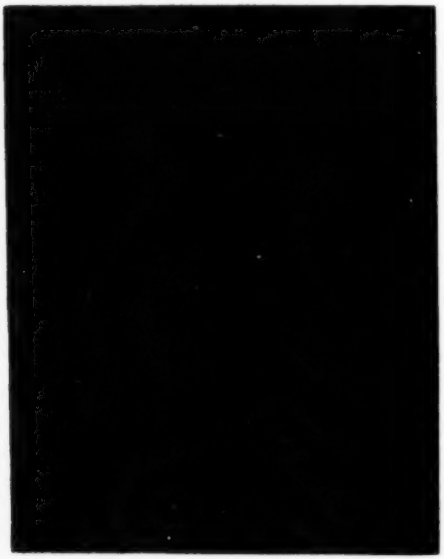

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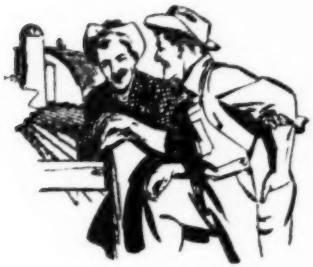
The Farmer's Digest

Volume 23 December 1959 Number 6

How To Use Government Programs



Here's a summary of "help" programs available to you. Consider how you can use them . . .

Condensed from Successful Farming

Fred Bailey, Jr.

THIS guide will help you get the maximum benefit from farm programs available for your use.

Price Support Loans

Loans are available on 19 different commodities ranging from corn to crude pine gum. By taking out a loan you benefit two ways.

First: Assurance of a minimum price you'll have to settle for. Should market price of your crop eventually rise above the loan, you may simply pay off the loan plus a 3½% interest charge and sell the crop for what it will bring. On the other hand, if price fails to climb above the loan, you keep the full amount of the loan and CCC takes over the crop you put up as collateral. No interest is charged on an unredeemed loan.

Second: You can have the cash for your crop right after harvest, without taking the penalty of a low harvesttime price—sometimes 20% below season's average.

Now, getting down to details. Deadline for making an application at the county ACS office varies by crop and area, but is generally 6 or 7 months after the normal harvest date for the crop in your county.

Reprinted by permission from Successful Farming, Des Moines 3, Iowa

The loan can be paid off — at your option — any time up to the maturity date, usually 3 to 4 months before the following year's harvest. As a practical matter, however, CCC will permit redemption of farm-stored loans up to the time the government acquires physical possession of the crop, the so-called "delivery date."

Before the CCC will OK a loan and fork over cash, though, there are some conditions to be met:

1. The crop must have been grown *on your own farm,* and during the season in which you are applying for a loan.

2. The crop must, during the course of the loan, be kept in approved storage facilities — either on or off the farm. If you store in commercial facilities, it's up to you to foot the storage bill.

A skylark eats about 6 pounds of food per year, mostly insects and weed seeds.

3. The crop must meet certain minimum grade and moisture standards before CCC will approve a loan.

CCC provides free disaster insurance for the crop you are holding under loan. In the event of flood, windstorm, or other "act of God" which destroys the stored crop, CCC will mark the loan "paid." This doesn't mean, however, that the government will bear the loss if you let the bin roof leak or fail to watch out for rats.

Purchase Agreements

This is an alternative type of price-support arrangement available to most farmers. In many ways, it is similar to a loan: With few exceptions, the eligible crops are the same; deadlines for application and the amount of price support offered are likewise the same.

But there are some noteworthy differences. A purchase agreement is *not* a loan; it is simply a contract between you and CCC, obligating CCC to purchase your crop should you be unable to get a higher price in the market. Price CCC agrees to pay is the loan rate based on the quality of the crop *at the time of delivery.* But you collect no money from the CCC until you actually sell, nor are you obligated in any way to sell to CCC.

Here are some of the reasons you may want to consider a purchase agreement rather than a loan:

1. There is no interest charge.

2. Crop need not be held in CCC-approved storage, since the CCC price you receive is based on delivery quality.

3. Greater flexibility in your feeding and marketing plans. If, for example, you get a *loan* on 10,000 bushels of corn, then decide to feed half of it, you must first redeem the loan on that portion — a lot of red tape. With a purchase agreement, there's no need to check with CCC.

Grain Storage And Reseal Program

At the outset, CCC will lend you up to 80% of the cost of constructing approved, on-the-farm facilities for storing grain, charge only 4% interest, and allow 5 years for repayment. Loans can also be obtained from CCC on up to 75% of the cost of grain-drying equipment — at 4% interest and with 4 years to repay.

Once your storage bin is standing, you can use it to store grain under an extended loan and thereby collect "resealing" payments.

Eight price-supported grain crops are now eligible for resealing, at the following rates: 16c-17c a bushel a year for wheat, rye, and soybeans; 16c for corn and barley; 12c for oats; 18c for flax; and 28c-31c a hundredweight for sorghums.

Although the number of years you can collect resealing payments on any one year's crops varies from state to state and from year to year, CCC now authorizes resealing of most crops for 3 years.

Price Support For Wool

This program operates neither through a purchase agreement nor a loan — rather through a direct "incentive payment" from the government.

How it works: The incentive level is set at 62c a pound. Assume, for illustration, the average market price for the season is 44c — 60% of the incentive level. Thus, USDA sends each woolgrower a payment equal to 40% *of the price at which the grower sold his wool.*

In this case, a grower who marketed his wool for 50c a pound (6c above the season's average) would get a government check for 20c a pound.

This shows why there's a 2-*way advantage* to selling your wool at the highest possible market price: First, a higher initial return. Second, a larger incentive payment.

USDA also makes payments on lambs marketed unsheared. Payment is figured on an average

Anthrax is one of the oldest and most destructive diseases recorded in history. It occurs on all continents, and in all climates. It affects all warm blooded animals.

of 5 pounds of wool per lamb, and the rate per pound is based on 80% of the difference between the incentive price and the season's average wool price.

How to collect your payment: Apply to your local ASC office. You'll need to have records showing the number of pounds of wool sold and the prices received during the preceding April 1 to March 30 marketing year. Deadline to apply is April 30.

In the case of the payment on lamb, you'll need records to indicate the number of pounds of lamb bought during the year and the number of pounds sold; your payment will be based on the difference — if you owned the lambs at least 30 days.

It takes 5½ lbs. of food to maintain the average American, daily.

Agriculture Conservation Program

It is designed to help share the cost of performing approved conservation practices which save, protect, and improve soil and water resources.

Here's how to participate:

1. Obtain a list of approved practices from your county ASC office.

2. Decide on practices needed on your farm. You can work out a long-range conservation "plan" for your farm. You can get help from your county Soil Conservation Service or US Forest Service office. Use this as a guide in deciding which practices are most urgent.

3. File an application with your county ASC committee. Explain why the practice is needed. They'll notify you how much of the cost they will pay.

4. Once you get a go-ahead, try to complete your practices by the deadline date. Ask for an extension of time if you cannot complete on schedule.

5. Notify the committee just as soon as you have completed the practice.

Generally, the government pays half the cost. The other half — your share — can be paid in cash, *but doesn't have to be.* You can count labor, conservation materials, or equipment which you furnish as your contribution.

In most counties, you can collect your ACP cost-sharing payment either of 2 ways: (1) Pay the entire cost of the practice yourself, then apply to ASC for the government's share. (2) Apply for a purchase order in advance and turn it over to the contractor or supplier who works on the job.

Like all farm programs, ACP has some rules and regulations:

1. Limit of cost-sharing pay-

ments to one farmer is up to $2,-500 per year (except where two or more farmers under-take a practice jointly; then it's $10,000 per farmer).

2. ACP won't share cost of practices to bring new land into production.

3. Cost-sharing will not be approved if the farmer begins the practice before he makes an application.

4. In some cases, the county ASC committee will *insist* you use the free help of Soil Conservation Service and/or U.S. Forest Service technicians.

Federal Crop Insurance

This provides a way to "even-out" risks of crop loss due to the worst ravages of nature, or even low yields.

Farmers in more than 800 counties can now buy a policy that pays off in the event of floods, drouth, hail, wind, winter kill, lightning, plant diseases, frost, excessive rain, fire, tornado damage, or insect infestation.

Policies are written that cover wheat, corn, barley, oats, soybeans, dry beans, flax, tobacco, and cotton.

Here's how a policy works: Assume you plant 100 acres of corn and insure it for 30 bushels per acre. The risks in your particular area dictate a 6% premium, and that the price of corn is set at $1.15 per bushel.

You are insured for 3,000 bushels of corn with a value of $3,450. Premium is $207. Should the value of your crop, at harvest fail to come up to $3,450, crop insurance will make up the difference.

If interested in taking out crop insurance, here's what to do:

1. Contact the sales agent in your area; find out what crops are eligible for coverage and what the rates are.

2. Do a little pencil-pushing; if rates seem to be in line, sign up ahead of the deadline.

3. Once your crop is planted, file a report with the agent as to acreage. Pay the premium then and get a 5% discount or wait until after harvest.

4. Should you have a loss during the growing season, file a report immediately.

5. If, at harvest, yields are below those specified in the policy, file a claim for payment.

Feed cost per dozen eggs depends on rate of laying, explains a poultry specialist. Leghorns averaging 144 eggs a year use 6 pounds of feed per dozen eggs, while Leghorns producing 240 eggs per bird require 4½ pounds for each dozen.

Farmers Home Administration

FHA offers a ready source of

credit for farmers lacking the security to borrow elsewhere. To obtain a loan:

1. Explain your capital requirements to the county FHA office. Be prepared to show how you can use the money profitably and how you will be able to repay it.

2. An FHA credit adviser will lend a hand in working out an application for submission to the farmer's county FHA committee.

FHA loans are available for a variety of farm credit needs, but generally fall into one of 5 categories:

1. Farm ownership loans are available to purchase a farm, to enlarge your present farm to an efficient family-size unit, to improve farm buildings, or to refinance. Loans can be for up to 40 years. Interest rate is 5%.

The ten Great Plains states contain 37% of our land, produce 40% of our crops, 60% of our wheat, and 46% of our cattle.

2. Operating loans provide capital needed to improve or enlarge a farming operation, or both. They can be used to buy equipment, fertilizer, livestock, feed, or seed. Interest is 5%. Repayment period runs from 1 to 7 years.

3. Soil and water conservation loans enable a farmer to carry out conservation measures. Also to develop an irrigation or farmstead water system. They run up to 20 years. Interest rate is 5%.

4. Disaster loans are available to farmers in need of credit to rebuild their farm business following severe drouth, flood, or other disaster. Interest rate is only 3%.

5. Farm housing loans are designed to help farmers in building and repairing their house and farm buildings. Repayment period is up to 33 years and the interest rate is 4%.

Soil Conservation Service

It isn't one of the federal agencies you can tap for cash but it does offer, free of charge, something of equal dollars-and-cents value: Technical know-how to make the most profitable use of your most important resource — land.

Here's how you benefit: A soil expert will survey your farm and draw up a "soil map." From this, plus soil tests, he can determine which areas are best suited to cultivation, which to pasture and which to timber or other use.

Next step is preparation of a complete farm conservation plan. This "blueprint" will include recommendations as to crop rotations that will result in maximum soil fertility; also supplementary conservation practices

such as terracing, building a pond, or establishing grass waterways where they are needed to halt erosion.

Also administered by Soil Conservation Service in 331 counties in 10 states is the Great Plains Conservation program. It's open to farmers in Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming.

How it works: Farmers enter into a 3- to 10-year contract with the government, agreeing to put into effect a complete conservation and cropping plan on their farm. Government pays up to 80% of the costs of such practices as converting cropland to rangeland and adopting approved methods of water management.

Stilbestrol Most Reliable Feed Additive

STILBESTROL, one of several feed additives on the market today for fattening cattle, has given the most consistent benefit of all feed additives tested in recent years.

T. R. Greathouse, Illinois livestock specialist, reports that stilbestrol has produced an average response of 18 percent in weight gain. This result compares with 4 percent for antibiotics, 11 percent for tapazole and 12 percent for enzymes.

On the average, stilbestrol-fed cattle require 12 percent less feed. Tapazole saves only 6 percent of the feed; and antibiotics, 3 percent.

Here's a brief summary of other feed additives that have been under test:

Antibiotics: The biggest problem of antibiotics is their lack of consistent benefit in various feeding trials.

Tapazole: Tapazole's advantage is greatest if fed only during the last 30 to 60 days of the fattening period. It it not available on the market though.

Enzymes: These additives are new and they produce no response in cattle on high-moisture grain-type rations. More work is needed to justify use of this additive.

Live rumen culture: In general, use of this additive has failed to demonstrate any advantage in average daily gain and feed efficiency.

Chemobiotics: Results of this additive have varied. On the average, it has proved less efficent than antibiotics.

Tranquilizers: The average experimental results with this additive have not shown an improvement in average daily gain or feed efficiency in the fattening ration. —*Livestock Breeder Journal*

Look What Happened To 1958 Corn

LAST year, 1958, farmers produced a then record crop of 3,800 million bushels of corn. Yet more than 98 percent of that amount was used and exported before October 1 of this year. Only 59 million bushels, less than 2 percent of the crop, was added to the carryover! Last November, USDA experts forecast that the addition to the corn carryover would be around 300 million bushels, five times as much as now appears to have been added.

Total disappearance of corn during the marketing year ended October 1 was 3,741 million bushels. This was 371 million bushels more than the previous record disappearance, just a year before. It was 270 million bushels more than United States Department of Agriculture experts calculated last February 1. The important point is that no one really knows how much corn we can use with prices in the $1.00 to $1.15 range.

When our best experts make such errors as the above, we have good reason to be skeptical of promises of farm prosperity that might come as a result of new attempts to restrict production or marketings. We simply do not know enough about the causes and effects of prices to be able to guarantee results from any price-boosting program. Future programs will come with promises, not guarantees.

Look at soybeans for another example: The 1958 crop totaled 574 million bushels. All but 41 million bushels of the crop was used or exported before October 1. This amount was added to the carryover on October 1, the beginning of the new marketing year. Last November, USDA outlook experts said that the addition to carryover would be around 80 million bushels, or twice as much as the actual.

There are lots of unknowns about the demand for and prices of farm products.

Here's another case: Thirty years ago our ranchers and farmers produced only enough cattle to provide 50 pounds of beef per person in a year — less than a pound a week. And there was much talk then about overproduction. Now our cattlemen supply enough beef to provide 80 pounds per person — 60 percent more than in 1929. And yet beef cattle are at the top of the farm price totem pole.

L. H. Simerl in Illinois Farmer's Outlook Letter

It's Time We Improved Our Public Relations

"Historians will mark this decade as the period when farmers lost the understanding and respect of fellow Americans."

Condensed from American Fruit Grower

Dr. H. B. Tukey, Michigan State University

"AGRICULTURAL historians of the future," says Jim Roe of Chicago, "will mark the present decade as one in which farm people lost the understanding and respect of their fellow Americans. Seldom has a professional or occupational group been so systematically and inaccurately reviled."

A national magazine speaks of farmers as willing to sit back and do nothing at all for the payments which they supposedly receive from the Federal Government; and then it asks, "Does that make you feel good at income tax time?" Another magazine inaccurately suggests that by eliminating support programs "your Federal taxes could be cut 6%" — referring unfairly to the entire appropriation for agriculture, which includes research in which the consumer benefits even more than the producer.

It has come to such a pass that a letter to the editor of the *New York Times* calls for "schools instead of surpluses." We have become the hideous object of comparison.

No wonder that John Zuckerman of Stockton, Calif., despairingly said before a national committee recently: "I have watched with concern — indeed horror — over the years as a concentrated effort is made to inflame an unenlightened public against the American farmer. He is systematically blamed by the people for starting and propagating nearly every social ill of our century."

How did this all come about? Much of it goes back to the emergency programs that followed World War II, which were invoked to take up some of the slack from an over-expanded war agriculture. The program became a political football, in which the party in power was castigated by the "outs." The farmer was the one in the middle; he became the culprit.

Reprinted by permission from American Fruit Grower, Willoughby, Ohio

Remember the potato program and the pictures of huge piles of dyed and destroyed potatoes? Actually, the cost of the program was $256 million (not billion, as often quoted), and the egg program was $87.5 million. The costs were high enough, but they were nowhere as important as the news channels of America made them out to be.

Now, the Gross National Product of the United States was announced in August as $485 billion a year. In 1958 (the latest figures available), the American people spent a total of $57.7 billion for food that was grown on American farms. Of this, $36.9 billion went to the marketers and only $20.8 billion to the farmer.

In other words, the American farmer received only $20 billion in 1958 for all the foodstuffs he grew which the American people consumed. Try telling this to your city sister or your cousin or your aunt. They will not believe the figure is so small; and, for that matter, a lot of you who read this will find it hard to believe.

Further, the Federal budget for 1959-60 is to be around $80 billion, and the deficit year of 1958-59 saw expenditures of $80 billion. This means that the cost of Federal Government in 1958-59 was almost exactly FOUR TIMES what the farmer received for the foodstuffs he provided to the American people in 1958.

Never before in history has a nation been fed with such an abundance of quality and variety at such a low cost. Much is made of subsidy payments to farmers. It is time someone began asking who is subsidizing whom. It looks, at times, as though the farmer is subsidizing the rest of the country with low cost foods.

But does the farmer and those who work with agriculture get much credit for this remarkable showing? On the contrary, the farmer is the maligned individual. But do not misunderstand me — it is largely our own fault for permitting this to be so.

Along with this have come the stories of migrant labor, poor housing, a single electric light left burning in the room so as to provide heat to a cold family; primitive sanitary facilities; no educational, social or recreational opportunities. Never mind the truth and the fact that many families return year after year to work for the same grower. Forget the improvements that many growers have made. It is the

When first discovered by white man, Indians of South American ate ants, mixed with resin, and cooked.

other side of the story which the public hears, and it makes a pretty sordid story.

But there is no use bewailing our lot and the fact that the general public has been given a woeful lot of misrepresentation and misinformation. The thing for us to do is figure out what we should do. Or is it worth doing something about?

This is the age of group action. Government is a part of our lives, and government is controlled by what people think. We need to be represented by able persons from well-organized groups.

Nutritionists estimate it would take about a 9 percent increase in milk production if American families had the recommended allowance of calcium. This would amount to an increase of more than 130,000,000,000 pounds of milk per year.

Agriculture has many problems which are governmental in nature. There are problems with pesticide regulations and tolerances, with imports and exports, with marketing agreements, with pricing, and with regulation of trucking, railroads, and co-operatives.

Also, most of us like to be appreciated and well thought of. We like to be respected for what we are.

Then where do we start? We start with each one of us becoming interested in doing something locally in our own small way with the crops that we grow.

There is nothing like quality and service to impress the consumer. We must do better with both. In the Fruit Industry, "pick-your-own" has possibilities. Roadside stand contacts can help.

Next come actions by small groups — the blossom festivals, the harvest festivals, the pie-baking contests, the Smorgasbords, and the beauty queens. We have done well on this, but we must keep moving ahead.

Next come actions by large groups which publicize the merits of our products — Sunkist, Florida Citrus, National Peach Council, National Cherry Institute, National Apple Institute-International Apple Association, the Pear Council, the American Dairy Association, and so on and on. Each one helps the other and each local group helps the national picture. We must think more in terms of the whole; and the local and commodity units will take care of themselves.

Finally, there are the paid expert public relations experts. It is a question whether more of our

advertising and promotional funds should not be used for public relations. Why not contribute a certain percentage of all commodity promotional funds into a national public relations agency, for the welfare of fruit in general?

Remember the image of the aloof, stern, ruthless J. Pierpont Morgan of a number of years back which was replaced in the public mind by a human being with good intent?

This is the sort of thing that public relations experts can do. They can watch for misstatements in the news, follow them, and correct them. They can enlist the help of other industries. They can develop the proper image of a farmer and his problems and convey it to the general public. They can fill the copy desk of newspaper, magazine, radio, and TV with handy material for their free use.

Then we have our great universities and experiment stations and extension services that we might call upon. Have we told enough of the exciting stories of how research is helping the general public? of the sweeping advances in agriculture? of automation? of mechanical harvesting? of quality products? or food technology?

Why do we not ask the extension services, the departments of agricultural economics, and the information services of these great institutions to do more for us in this important and worthwhile area? As Dean L. L. Rummell of Ohio says, "The pen is mightier than the sword. Still more mighty is the plow. The plow and the pen together are the key to unlimited progress in agriculture."

The facts are that agriculture stands in a bad light with the general public, that we have been exploited by politicians and used as whipping boys for their devious purposes, that we have the products and the materials with which to reverse this trend, and that if we will put our minds to the task we can return our position to the one of respect and appreciation that we as "Food Manufacturers of the Nation" properly deserve.

Figure it out for yourself, my lad,
You've all the greatest men have had —
two arms, two hands, two legs, two eyes,
And a brain to use if you would be wise;
with this equipment they all began,
So start for the top, and say, "I can".

New Mastitis Vaccine

Mastitis isn't licked yet but this new vaccine strikes a stunning blow at the most potent infection still unconquered . .

Condensed from
New England Homestead

A VACCINE which prevents the spread of and increases resistance to costly staphylococcal mastitis in dairy cows has been developed by an agricultural experiment research team at the University of New Hampshire.

The new vaccine which strikes a stunning blow at the most potent bovine mastitis infection still unconquered, is expected to be in commercial production by late 1959.

Dr. Lawrence W. Slanetz. bacteriologist, and associates in five years of tests with a dairy herd of 160 lactating cows have found:

1. Vaccination with a staphylococcal toxiod or bacterin-toxoid almost completely prevents spread of the infection in vaccinated cows.

2. Vaccination also brings a marked reduction in the number of acute flare-ups in infected cows over periods of up to 18 months.

The vaccine stimulates the production of antibodies thus increasing an animal's resistance to the infection.

Working with Slanetz were Drs. Clara H. Bartley, research associate in bacteriology and Fred E. Allen, University of New Hampshire veterinarian. The break through in the fight against the bovine malady is reported in the current issue of the New Hampshire Alumnus, alumni publication.

According to Slanetz, bovine mastitis ranks as the most costly infection of dairy cattle in many parts of the world. Effective methods for control and eradication of mastitic infection caused by streptococcus agalactiae are now available but no real progress had been made in treatment and control of the "staph" type. The researchers here found that from 10 to 60 per cent or more of cows in a herd may be infected by staphylococcus aureus. This is an organism similar to

Reprinted by permission from New England Homestead, 29 Worthing Street, Springfield 3, Massachusetts

that which causes abscesses, boils and communicable hospital "staph" infections.

Dairy scientists estimate that in the U. S. alone mastitis causes an annual loss of $250 million including five billion pounds of milk, enough to provide every man, woman and child in New York City with a quart a day for nearly 10 months. The ailment damages udder tissue, cuts milk production, brings about premature slaughter and is expensive to treat.

Cows used in the Slanetz experiments were housed in two barns. Both groups received similar management and all animals were milked in the same milking parlor. Both groups had about the same percentage of "staph" mastitis. Of 40 cows in one barn, 16 were vaccinated with a staphylococcal toxoid prepared in the University of New Hampshire laboratory. Fifteen received a commercial toxoid and nine were used as nonvaccinated controls. Of the 60 cows housed in the second barn, records were available for 30 throughout the 18-month test period. These animals were also controls.

In the total group of cows given toxoids, 16 percent of 124 quarters of the udder were infected prior to vaccination and 14.1 per cent of the quarters were infected at the end of the test period. Among the controls in the same barn, 16.6 per cent of 36 quarters were infected at the start of the experiment while 50 per cent were infected at the end of the 18 months. Seventeen acute infections occurred in the 31 vaccinated cows and 33 in the nine nonvaccinated animals in barn one. There were 46 acute cases in the 30 nonvaccinated cows in barn two. Some of the same quarters may have had more than one acute flare-up. All quarters showing abnormal milk or swelling of the gland were treated with antibiotics. Bacterin-toxoid vaccination also produced favorable results.

Slanetz reports vaccination did not result in the recovery or elimination of the infection in the majority of quarters with well-established chronic infections. When challenged with one to five billion vriulent mastitis "staph" organisms introduced through the teat canal, the vaccinated cows developed only mild reactions of short duration. Severe, acute reactions developed in the nonvaccinated cows similarly challenged.

The scientists says the potency of the vaccine may be improved through further study. The researchers seek additional information on the most effective number of infections, when these may best be given and the duration of immunity.

"Extra" Pounds On A Hog — What Of It?

A few more days may spell the difference between profit or loss . .

Condensed from
The Hormel Farmer

"WHY all the fuss over a few extra pounds? It's just more of the same, no one will notice, and anyhow — what difference does it make."

How often have you heard these questions — or are you one who's been asking them?

Just for the record, we have reference to overweight hogs — not diet-conscious people.

The problem is with people and about hogs. Hogs are produced and pork is processed for human consumption. Human beings are the ones who either reject or relish the final product. The producer is the one who decides when and in what condition the hog goes to market. The hog never makes this decision, though he might do better at times.

Many hogs are fed beyond a desirable weight (200-220 pounds), because the owner didn't realize they were heavy enough. Other explanations offered include holding until the market rebounds, holding until a full load is ready, other farm work was more pressing, had plenty of home-grown feed, couldn't buy replacement feeders at a reasonable price or economic advisors recommended feeding to a heavier weight.

The business of selling hogs at desirable weights has never been taken seriously enough. One should never yield to the temptation to out-guess the hog market. The record book is filled with the names of experts who have tried and failed.

Protect Your Investment

Actually, the best and quickest way to protect your investment in good breeding and feeding is to sell at 200-220 pounds. Most improvements cost more money. If you want a boar from a certified meat litter, a more completely fortified ration or labor-saving equipment, you must invest accordingly. But marketing

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at the most desirable weight doesn't cost a penny more. The price benefit is both direct and indirect. The market top is on desirable weights, and as the percent of the total increases with the hogs of these weights, the total market improves.

Your hog will never be more nearly right for the market. If he won't grade a No. 1 at 200-220, he probably never will. More pounds will only change him from a No. 2 to a No. 3.

Extra Is Costly, Low Value Excess

The word extra means excess. These unwarranted pounds are *market depressing*. They are not more of the same. The excess weight is mostly fat, costs more to put on, and is worth less per pound than the live hog.

A hog market 95% satisfied with receipts normally has a strong undertone. One that is confronted with 105% of the needed tonnage develops a weak undertone. Ten pounds extra on a 220-pound hog is close to a 5% increase. That is enough to change the tone of the dressed pork trade.

Every producer with hogs ready to sell would do well to read the check list below when he is tempted to feed to heavier weights.

What happens after 220 pound:—

1. Feed efficiency goes down.
2. Costs per pound of gain goes up.
3. Most of the increase is fat.
4. Excess fat lowers the market grade.
5. Both extra weight and lower grade promote discounts.
6. Price discounts apply to the original weight as well as the extra pounds.
7. Anyone who advises you to hold for a higher price doesn't know what the market is going to do either.

B-2-4-6-8-10, Code Success

The following code makes it easy to remember the important things to do and when to do them in raising hogs.

B—Be there at farrowing time and clip needle teeth.

2—Creep feed at 2 weeks.

4—Castrate by 4 weeks.

6—Vaccinate by 6 weeks.

8—Wean by 8 weeks.

10—Worm treat at 10 weeks.

What's New In Cattle Feeding

A review of recent developments to help you cut the cost of feed lot gains . . .

Condensed from Pennsylvania Farmer

Thomas B. King

THE cattle feeder today must keep up-to-date if he expects to stay in the business.

To his advantage this year is another huge corn crop — even bigger than last year. This means cheap feed, but a big build-up in livestock numbers is working against him.

Cattle numbers increased 3½ million last year, are expected to go up another four to five million head by January 1, 1960. This will give us a record 102 million head. Production will also be high in 1960. As a result, the law of supply and demand will be working against the livestock producer, at least more so than during the past three or four years.

Lately the price of most finished cattle out of our feed lots has been in the region of 26 to 30 cents. It has been no trick for the cattle feeder to put on a pound of gain at a lower figure. But if cattle prices drop back several cents within the next couple of years, costs of feed lot gains will become extremely important to the cattle feeder.

More Economical Gains

During the past few years, researchers have changed cattle rations considerably in order to get faster and cheaper gains. To some readers of this article, many of the changes will not be new. These men are the innovators, the fellows always eager to put a new idea into practice. Frequently they get the jump on their competitors in the cattle feeding businesss. Once in awhile new ideas backfire.

Hormones — The majority of the cattle feeders in this country today are using hormones to stimulate greater gains. The specific hormone, stilbestrol, has probably done more to increase feed lot gains than any other discovery in recent years. Cattle on full feed receiving stilbestrol will outgain non-stilbestrol cattle about 16 per cent with a saving of 10 per cent in feed per pound

Reprinted by permission from Pennsylvania Farmer, Harrisburg, Pennsylvania

of gain. Stilbestrol can be mixed with the feed or implanted as pellets under the skin of the ears of cattle. Both methods of using the hormone have advantages.

During the past three summers, stilbestrol-implanted steers on a pasture experiment at Penn State University out-gained the non-implanted steers 17 per cent. Two 12-milligram pellets (24 milligrams) are usually recommended for steer calves and 36 milligrams for heavier cattle. More than this will give rather severe side effects such as low loins and high tail-heads. It is best not to implant heifers.

Feeding Stilbestrol

Research shows that the first implantation lasts about seven to eight months. A second implant at this time will produce additional gains if the cattle are not ready for market. If the cattle are to be marketed within two or three months, it may be wise to feed stilbestrol rather than re-implant for the remaining period. Undesirable side effects from a second implanting might still be present at marketing time.

If you prefer to feed stilbestrol in a supplement, it should be fed at the rate of ten or eleven milligrams per animal per day. This can be purchased in supplement at the rate of five or ten milligrams per pound of supplement. Five milligrams per pound of supplement is usually listed on the feed tag as .0011 per cent, and ten milligrams per pound is .0022 per cent. If only one pound of protein supplement is needed to balance a ration so far as protein is concerned, buy a supplement that contains ten milligrams of stilbestrol per pound.

Other hormones and combination of hormones are being used to stimulate cattle gains. Most of them are still more expensive than stilbestrol. However, the cattle feeder today who is not using stilbestrol is at a competitive disadvantage.

The difference between intelligence and an education is this — that intelligence will make you a good living.
—Chas. F. Kettering

Protein and Substitutes — Livestock producers have rapidly increased the use of high protein feeds. Protein consumption per animal unit has jumped from 132 pounds prior to World War II to an average of 246 pounds during the past five years. Cattle should receive one to two pounds of protein supplement daily. The amount needed will depend on the remainder of the ration, especially the roughage portion. If cattle in dry lot are receiving no legume roughage, then two

pounds of supplement is required to get best results with most rations. For every pound of good quality legume hay, or three pounds legume silage, being fed, reduce the supplement by one-fourth pound.

When you buy protein supplements, a good rule to follow is to buy where you can get a pound of protein at the cheapest price. Divide the cost of supplement per hundredweight by the figure given as per cent of crude protein.

Protein Sources

A mixture of protein sources such as soybean, linseed, cottonseed, etc. is usually no better as a cattle feed than protein from one source. The biggest advantage in most good commercial supplements is the fact that they contain a daily source of trace minerals which may be needed by the bacteria in the rumen. It is the rumen bacteria that make available to cattle a lot of the nutrients in cattle feed. Much remains to be learned about rumen digestion in cattle and sheep.

Trials at the Ohio Experiment Station show that tom turkeys will gain faster while roughing it outdoors than they will indoors.

Forage, hay, silage, and pasture varies tremendously in its feed value. Often a forage test will aid the cattle feeder in knowing how to supplement his feed.

Protein substitutes are frequently used in cattle supplements today. Urea is the most common. About five per cent urea is usually recommended as the maximum amount for mixing in a supplement. Urea is no better than other sources of protein. It is used because it is cheap and it offers a way of making beef cattle supplements at a lower price. If you can buy a supplement containing urea at a low enough price to make a pound of protein cheaper than you can get in such materials as soybean meal, it is a good buy. That is, if fiber content is not above seven or eight per cent. If the fiber is eight per cent or more, chances are that the natural ingredients that were saved by using urea were replaced with low-quality feeds such as mill screenings, etc.

Liquid Urea

Urea can also be fed in a liquid form when mixed with molasses, phosphoric acid, water and sometimes ethyl alcohol. Results with this liquid supplement have compared favorably with dry supplement. However, many feeders have experienced difficulty in getting their cattle to consume the desired amount of this

product. When fed free choice the cattle frequently consume too much, resulting in an expensive gain.

Other protein substitutes have been tried with varying degrees of success. Among them are dehydrated sewage sludge, feather meal, poultry droppings, etc.

Silage — Greater use of high quality silages is one of the surest ways of lowering the cost of beef production. This statement, made by one of the nation's leading beef cattle nutritionists, is true most years. However, right now when the price of corn is relatively inexpensive, the cost of silage gains have not held the edge over gains made by dry concentrate feeds such as corn and cob meal. Regardless of the present situation, silage is growing in popularity by the cattle feeder. There is a definite swing toward bigger silos capable of holding from 600 to 1200 tons of silage. Lower per ton storage costs favor large diameter silos, but mechanical unloading and conveyor feed bunks become more important.

Corn silage continues to rank as the most popular silage for feeder cattle. Probably more total feed can be obtained from an acre of good land in the form of corn silage than in any other way. However, more and more grass and legume silage is being made each year. It must be well preserved or its feed value drops considerably. And because of its higher protein content and lower TDN than corn silage, it needs to be supplemented differently.

Some cattle feeders are now putting a complete fattening ration, both grain and silage, into the silo at filling time. In a recent trial at the University of Illinois, an "all-in-one" silage of 60 per cent alfalfa and 40 per cent ground shelled corn gave as rapid and cheap gains when fed to steer calves as a fattening ration composed of shelled corn, corn silage, soybean meal, and hay. Both lots gained about 2.5 pounds per head daily. These gains were about one-third pound per day greater than was secured with silages made from either 60 per cent oats forage and 40 per cent corn or 60 per cent corn forage and 40 percent corn grain.

No sheep were native of Austrailia, but millions thrive there now.

High-Moisture Corn — Lately many feeders have been eliminating any risk of corn spoilage by picking their corn early at a moisture level of about 30 per cent and storing it in the silo. An air-tight silo works best but several men have had good results with high-moisture corn

stored in regular silos. Unless a great number of cattle are to be fed, a small-diameter silo is preferred. The corn can be blown into the silo either in the shelled form or as ground ear corn.

Tests have shown high-moisture corn will produce gains as fast as regular corn. On a dry-matter basis, the high-moisture corn is just as efficient in producing gains.

Pelleting — It looks like pelleted or high density feeds will have a bright future for the livestock feeder. Feeding tests so far have been somewhat erratic with beef cattle, but with feeder lambs complete pelleted rations have been promising.

The Egyptians domesticated the cat, and used them to keep granaries safe.

Sometime in the future, portable pelleting machines will probably replace the hay baler in the field. Pelleted feed, especially forage, requires much less storage space and is easier to move with automatic feed handling equipment.

Much interest in pelleted forages for beef cattle was stimulated by the results of an Illinois test comparing hay in baled, chopped, and pelleted form as a ration for wintering steer calves. The cattle receiving the pelleted forage made almost three times the average daily gain of the other cattle receiving baled and chopped hay. Apparently the greater daily intake of hay in pelleted form was due to its decreased bulk, about one-fourth that of baled hay.

Tests comparing the advantages of pelleting complete rations compared with similar rations in meal form have been variable. On the basis of feed lot performance, a few tests have shown pelleting to be worth about $6 per ton.

The nutritional advantages of pelleting complete rations, and increased feed efficiencies, are greater when the roughage part of the ration is low grade and when the ration is adequately fortified with additional protein, vitamins and minerals. Under these conditions the difference between high quality and low quality roughages is considerably reduced.

Antibiotics — Since the addition of antibiotics to hog and poultry rations proved beneficial, several experiment stations have tested many of the popular antibiotics in cattle rations. Over the past nine years, 15 experiment station feeding tests have averaged about four per cent greater gain resulting from the addition of an antibiotic in the ration; but

results have not been consistent.

A high level antibiotic feed may be beneficial when feeder cattle arrive in order to help ward off shipping fever; but it is doubtful that a low level antibiotic feed over a long feeding period will always be worth the extra expense.

Tranquilizers — Tranquilizers as cattle feed additives have not as yet been extensively investigatted by college experiment stations. Results reported thus far have not been consistently good although some preliminary reports have been encouraging. Judging from the many kinds of tranquilizers now available for testing, it seems probable that one or more may eventually be found to be helpful in cattle nutrition.

Probably the most applicable use of tranquilizers today is in shipping cattle. A dose of tranquilizer prior to loading will decrease cattle shrink enough to make it profitable to treat them individually before shipping. The use of tranquilizers is not usually recommended for cattle that are to be shown. It often causes them to be dull and listless in the show ring.

Other Additives — Many products are now being used in experimental cattle nutrition. Some of them will stand the test of time, others will fall by the wayside. When confronted by enthusiastic salesmen, ask to see reliable tests that will show a comparison of results. And don't be misled by the results of only one test. They sometimes vary considerably from experiment to experiment. Such variations often confuse both the cattle feeder and feed manufacturer as to the real value one might expect under average feeding conditions for a specific feed additive.

Additives that may merit your attention in the future are animal fats, enzymes, chemobiotics, rumen cultures, alcohol and thyroid blocking products such as tapazole. Animal fats have a high nutritional value and are stable in storage when treated with anti-oxidants. Fats also control dustiness and make it easier to pellet feeds. Initial experiments with enzymes appear promising when high corn rations are fed using corn with 14 per cent or less moisture.

Dan'l Boone, after a lifetime of fighting, died by being choked on hot potatoes.

Chemobiotic test results have been variable. Rumen cultures have failed to demonstrate any real benefits in the experiment station tests conducted to date. Tests of alcohol (ethanol) fed in small amounts (one to three

ounces daily) so far have not been promising. Tapazole is a synthetic chemical which exerts a "blocking action" upon the secretion of the thyroid gland and is presently used in human medicine for patients afflicted with over-secretion of the thyroid gland. Tests with cattle at Iowa State have shown the product to be promising as a gain stimulator (11 per cent on the average) with improved feed utilization (about six per cent) when fed at high levels (600 milligrams per animal daily) for relatively short periods (35 to 80 days) just prior to marketing. This product is still in the experimental stage and not on the market.

Certified Meat Type Now Bred Into Hogs

Litter certification is one means that farmers have of producing meat-type hogs, says J. L. Gobble, animal husbandman at Pennsylvania State University. Meat type has been found in all breeds in experimental work.

Lard has become so low in price that producers of excessively fat hogs may not be able to stay in business, Gobble warns. Purebred breeders should produce meat-type stock and growers of market hogs should use meat-type boars and also conduct selective mating programs, he says.

Requirements for meat certification vary with swine breeds but general procedures are the same. Only purebred litters are accepted for nomination. When the litter attains market weight, two pigs, either sows or barrows, are slaughtered. To qualify the litter for certification, these carcasses must be within the rules for backfat thinness, carcass length, loin eye area, and weight for age.

A boar that has sired five certified litters is a certified meat sire. Herd boars which do not certify five out of nine litters nominated should be castrated, Gobble believes. A strict sow culling system should also be followed.

Certified meat sires have C.M.S. imprinted on their breed registration certificates so that their abilities to produce desirable offspring may be known. In like manner, boar and gilt littermates from certified litters may have C.L. imprinted on their registration papers and C.L. becomes part of their registration numbers. Breeding animals from certified matings have C.M. imprinted on their breed certificates. —*Pennsylvania State University*

Chimney Smoke

by Irene Rudie

It isn't far to Bethlehem town!
It's anywhere that Christ comes down
And finds in people's friendly face
A welcome and abiding place.
The road to Bethlehem runs right through
The homes of folks like me and you.
—Madeleine Sweeny Miller

★ ★ ★

When you pack Christmas away into boxes with it's tinsel and it's lights, be sure to keep a little of it in your heart.

★ ★ ★

An old book on household hints says a good way to clean kerosene lamp burners is to boil them in water in which navy beans were parboiled. Not much of that being done these days.

★ ★ ★

The unsightly bolls on roses and goldenrod are highly prized by our fishermen. They contain tiny weevils to use for sunfish bait, so, by fishing, the men help reduce the insect population next summer.

★ ★ ★

A neighbor's dog, Rover, beat the gun in opening the Christmas packages last year. While the family was still at supper they heard a mighty rustling of paper wrappings under the Christmas tree, and rushing into the living room they found the dog unwrapping his own gift, a string of sausages.

★ ★ ★

Farm wives are apt to find strange things in their refrigerators, things like penicillin for a sick cow, or a jar of fat grub worms gathered while getting in the winter supply of wood by the fishermen in the family.

★ ★ ★

Probably there's no publication read by so many people, passed on from family to family, or from which so many clippings are cut to enclose in letters, as the little weekly home town newspaper.

★ ★ ★

As one little tot heard the words of the old carol: "The Shepherds washed their socks by night, all seated on the ground."

Is Push-Button Your Answer?

Before you say farm automation is for the big fellow, figure costs, labor and time it will save you . . .

Condensed from Prairie Farmer

Thomas Claque, Agricultural Engineer

CAN push-button farming be the answer for you?

Many farmers have wondered if it is just an expensive plaything for the really big operators, or if it can be economically significant around the average farmstead.

It is true that there are plenty of materials-handling installations that represent large investments. And it's easy to jump to the conclusion that all such systems have to be big and expensive. But this is not the case.

The key to making some sense out of this matter for you and your individual operation is an economic study. What can you do to cut your cost of production?

As a livestock producer, your problems are like those of the factory manager. You must produce at the lowest possible cost per item produced.

With the recent advances in nutrition and breeding of livestock, the best way to cut costs is by increasing your output — caring for more animals with every hour of labor.

This, of course, does mean mechanization of your farmstead.

You may wonder if this business of bigger and bigger operations is just a treadmill. Studies at Purdue University show that it is not. Expansion of your operation improves your efficiency only up to a point, and beyond that your unit costs of production don't go any lower.

For instance, they find feeding 75 to 100 beef cattle per year will give you maximum economy. Handling more than this will give you more volume for more total profit, but your operation won't be any more efficient.

With hogs, you'll get top efficiency when you have 25 brood sows. A flock of 1000 chickens gives lowest production costs as does a herd of 25-30 dairy cows.

So, how might push-button farming fit into your operation? What might you expect to invest?

Let's suppose you feed some

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hogs and have some chickens, and you could install an automatic mixing-mill for about $1200 total investment.

With such a setup you could elevate shelled corn, oats, and commercial feed into the overhead bins and let the mill grind and mix the complete ration as you need it while you're doing something else. It can be arranged to shut itself off when the job is done.

This would free you from the chore of grinding feed two or three times a week, which would be a welcome relief, of course. But it could also cut your actual dollar costs.

In the first place, your electric power costs for operating a mixing mill are likely to be lower than fuel costs for a tractor-driven mill. One farmer cut his grinding costs from 40 to 10 cents per ton when he went electric and installed a mixing-mill.

Snails have been used as human food by many peoples, since ancient times. The Romans fed them till they were quite fat, ate them raw, or cooked in grease, about like our french-fries.

In addition, you might be able to cut your commercial feed costs. The same farmer began buying bulk feed after he made the installation, and, because he provided ample storage capacity, he was able to purchase in big enough quantities to get a lower price on his feed.

The total cost of his installation will be saved in about three years, in reduced power cost and lower commercial feed costs alone. This is to say nothing of the labor saved which, at $1 per hour, would nearly pay his installation cost every year.

So, for this farmer's 700-hog, 1300-hen operation, the mechanization is pretty sound economically. What the situation would be for your operation depends upon its size and your existing buildings and equipment.

The biggest problem in this picture is finding the planning know-how necessary to get your operation mechanized most effectively.

The services of a good engineer are really needed more in a remodeling job than in planning a new farm, because it is so important to make the best use of what you have at the lowest cost.

Getting good help in planning and installing a materials-handling system is not always easy, although there are more and more people doing this work all the time. If you are seriously considering installing a new system, you might check with the local

extension service and your power company for names of people who can advise you.

Your own ideas and experiences are important, too. But before you make any major investments, try to get some sound engineering help.

Hay "Conditioners" Shorten Field Drying Time

The farmer who uses a "conditioner" on his hay shortly after it's cut can usually get the hay into the barn a day quicker as a result.

University of Minnesota agricultural engineers last summer found that hay conditioned with a crusher or crimper was dried down to 22 per cent or less moisture—dry enough for baling—within 29 hours after cutting. This, of course, was hay that wasn't rained on.

On the other hand, non-conditioned hay varied from 28 to about 43 per cent moisture after the same length of time. Even 28 per cent moisture is too high for baling. It would have taken this hay, in many cases, another 5-10 hours before it would be dry enough to put up.

Most of these tests were on hay cut at around 10 a.m. Since conditioned hay was dry enough for baling 29 hours later, it usually could have been baled on the afternoon of the next day. In some cases, depending on the weather, it was dry enough for baling by late morning of the day after cutting.

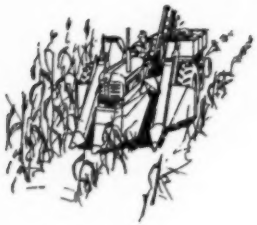
In most cases, however, unconditioned hay couldn't have been baled until the third day.

Agricultural engineer John Strait made the tests. He compared four kinds of conditioners—some with smooth rollers and some with corrugated rollers. He found that all types gave virtually the same results as far as drying is concerned.

Purpose of a hay conditioner is to crush the hay stem so it will dry faster. Normally, legume hay leaves dry faster than the stems. By the time the stems are dry, leaves are often so brittle they fall off at baling time. Legume leaves are high in protein, meaning they are important to save.

Therefore, by helping the stem dry faster, conditioning can mean higher hay quality. Also, getting hay dry and off the field quicker helps a farmer take advantage of shorter periods of good drying weather. *—University of Minnesota*

How Machines Can Raise Your Wages



Six ways to make more effective use of your farm machinery . . .

Condensed from Farm Profit

MANPOWER is the most expensive source of power on the farm today.

Back in the days when $1 a day was a good farm wage, a man could afford to dawdle along on a sulky plow and give the team a breather every now and then. But with wages at $1.50 an hour, you can't afford to waste a single minute in the field. To earn the best return for your time, make today's machines do more work for you by keeping them near peak capacity.

Time studies show there is a lot of room for improvement. When Iowa State engineers watched a baling operation, they found the machine operating at only 36% of its capacity. What was wrong? Well, it was the same thing that happens on a lot of farms — the baler needed an adjustment, and breakdown kept the crew sitting around long enough to waste $24 in wages. There was waiting for wagons and other stoppages that could have been corrected by better organization — things that you and almost any other farmer could do.

You can't be 100% efficient in any field operation since turns, lubrication and other necessary time losses are inevitable. But it is possible to be from 75% to 90% efficient on most tillage jobs; 60% to 75% in combining and from 75% to 90% in mowing, raking and baling hay.

In the paragraphs below, we have listed six things you can do to make better use of your time this coming spring. They may save you hundreds of dollars worth of labor. But even more important, better use of machinery can help you get the crop into the ground in time to make best yields or to hit a high market. It can help you harvest them at a speed that beats bad weather or rushes crops into the barn or bin before feeding quality can be

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lost. You are working for labor income — these are the things that can boost profits.

(a) Double up on tillage jobs. Today's tractors have the power to pull 2 or even 3 implements. Match load to power. Pulling a harrow behind the plow can smooth the soil enough to eliminate a disking and may be all the tillage needed ahead of the planter. Disc and harrow in one operation or pull a harrow behind the drill to cover your oats. Many farmers find that one trip with the disc harrow, drill and cultipacker in tandem can prepare the seedbed, place legume and grass seed in the soil, fertilize them, cover them up and then remove the tractor tracks all in one quick operation. How's that for efficiency? Doubling up can save you $4 to $8 per acre. Try it — keep your tractor working near capacity.

Modern science has come up with an answer to iron rust in the farm water supply problem. An agricultural engineer says that plastic pipe is a good replacement for badly corroded or rusty metal pipe, and it can be installed rather easily.

(b) Keep 'em rolling. You make best use of your time when you keep machines moving in the field. Perfection is impossible since it is necessary to slow down at row ends, turn, change wagons, lubricate, make adjustments, and minor repairs but every farmer can make some improvement. Most tillage operations run from 75 to 90% of capacity; drill planting from 70 to 85%; check-row planting from 50 to 65%; combining or picking corn from 60 to 75%; handling hay from 75 to 90%. There's quite a range between these percentages. Make the higher figure your goal. Do a better job in moving fuel, fertilizer, seed, etc. to the field and in hauling forage and grain away as fast as it is harvested.

(c) Four rows instead of two. You can save a lot of time with 4-plow, 4-row equipment. Iowa State figures show that you can expect to plow 2.5 acres per hour with four 16-inch bottoms and only 1.1 acres with two 16's. Corn planting rates are 3.3 acres per hour with a two-row outfit; 6.6 acres with a four-row. A 1-row corn picker can average about .9 of an acre per hour and a 2-row 1.5 acres. On 80 acres of corn you could do the entire job in 176 hours with big equipment and 292 hours with smaller equipment — that's about two weeks more work. You have more labor cost but even more important, those 14 days

may mean the difference between getting the crop in and out in time for top yields.

(d) More time in the field. Travel time and waiting at the elevator or blower slows harvest. Match your transportation and storage equipment to your field machines. A self-unloading wagon and a high speed elevator soon pay their cost if they can keep your combine on the move. In the Iowa State baling study, 13% of the time was wasted in waiting for wagons and in changing them. On another farm, where the system was better organized, only 4% was lost. Purdue figures show that an auger elevator will handle 1,000 bu. at 10c per hour. Scooping that amount of grain would mean a $12 labor cost and would take 15 hours. An elevator big enough to keep up with the corn picker will work for 1.2c per bu.

(e) Make your repairs now. Field breakdowns are costly. You may idle a crew, lose quality of the crop and repairs are harder to make than in a shop. Occasionally, more time is spent on repair and adjustment than in operating. Much of this repair and adjustment could be made during these winter months when labor isn't worth as much on other jobs. The farm shop is the place to make your repairs. Tools should be at hand, light and working conditions should be good. Before the season gets under way, get your plow shares, shovels and other cutting edges ready to go. Check over the assemblies that gave you the most trouble last year and make sure they are ready for the field.

(f) Do no more than necessary. Cultivating corn for the third time is a 10c an hour job on many farms. There are other traditional jobs that may not really be necessary. Cut them out of your schedule this year. Use chemicals for weed control to save cultivations — one preemergence spray may save you two trips through the field. Practice minimum tillage too. In

The average 1,000-chicken flock produces manure worth more than $300 per year in terms of commercial fertilizer value.

Michigan State tests attaching a plow packer, springtooth cultipacker or a revolving tiller behind the plow did a satisfactory job of preparing soil for planting. "Yields were as high as those from standard tillage," reports Engineer H. F. McColly. "Power and labor requirements were much lower." Almost every farm could save two or three days this coming spring.

FUN ON THE FARM

A Collection of Jokes and Humorous Farm Stories

A staid gentleman, honorary judge at a horse show, was upset by the dress of some of the girls.

"Just look at that young person with the poodle cut, the cigarette and the blue jeans," he decried to a bystander. "Is it a boy or girl?"

"It's a girl. She's my daughter."

"Oh, forgive me, sir," apologized the old fellow. "I never dreamed you were her father."

"I'm not," snapped the other. "I'm her mother."

★ ★ ★

The old-fashioned girl who said "This is so sudden" now has a granddaughter who says "Well, it's about time."

★ ★ ★

The crusty president of a country bank suddenly decided to be candid on his 80th birthday, when somebody asked him: "How did you get started in the banking business anyway?"

"Wasn't nothin' to it" confessed old moneybags "I jist hung out a sign sayin' BANK. Fust thing ya' know, a fellar comes along and deposits $100. A little later, another comes along and deposits $200. By then, I was so confident, I put in $10 of my own." —*Parade*

★ ★ ★

Girdle: A device to keep an unfortunate s i t u a t i o n from spreading.

★ ★ ★

Experience is the name men give to mistakes.

★ ★ ★

One of the best marksmen in the country was passing through a small town and everywhere he saw evidence of amazing shooting. On trees, on walls, on fences, and on barns were countless targets with a bullet hole in the exact center of the bull's-eye. So the man sought out the person responsible for this great marksmanship.

"This is the most wonderful shooting I have ever seen," the man said. "How in the world did you do it?"

"Easy as pie," replied the marksman, "I shot first and drew the circles afterwards."

The Texas Future Farmer

The only way some people get to the front of a church is in a casket.

—*The Ruritan*

★ ★ ★

"My son was just graduated from agricultural college."

"Did he win any honors?"

"Yes, he was voted the most likely to sack seed."

—*Arkansas Valley Journal*

★ ★ ★

A Kansas woman tells of going to the city to attend a cattlemen's convention. Determined to have something unusual to wear, she made a blouse and embroidered every cattle brand she knew on it.

In the hotel where the cattle folks stayed, she waited while her husband registered, noticing two old cattlemen giving her blouse the once-over. Finally one of them remarked in a loud voice, "That critter sure has changed hands a lot, ain't she?"

—*Future*

★ ★ ★

Found on a tombstone: This is the only stone I've left unturned.

—*Wisconsin Agriculturist*

★ ★ ★

Here's an engineer's description of the milk cow that will make you chuckle:

"The cow is a mobile, animated machine, housed in unprocessed leather. One end is equipped with a mower, grinder, bumper, headlights, wingflaps and foghorn. At the other end is a milk dispenser and a movable insect repellent.

"Centrally located is a conversion plant of a combination storage and fermentation vat, three converters in series, an intricate arrangement of conveyor tubes, a central heating plant, pumping system and air conditioning.

"Although mysterious and secret, this plant is unpatented. It is available in various sizes, colors and output ranging from one to 20 tons of milk a year."

—*A. I. Digest*

★ ★ ★

A young salesman was trying to make a hit at his new job. Among the numerous articles he sold was a garbage disposal. He was, on this occasion, trying to interest a farm house-wife in buying one.

However, the conversation came to an abrupt end when the young man asked, "What method of garbage disposal do you use?"

The quick answer was, "Four 'coon dogs, two cats, and six pigs!"

—*The National Future Farmer*

★ ★ ★

"Taxpayer"—one who doesn't have to pass a civil service examination to work for the government.

—*The Southern Planter*

A Kansas farmer says the best tranquilizer he ever had was a 4-bit rise in the price of wheat.

—The Furrow

★ ★ ★

A stock farmer ordered a sow and pigs which were highly pedigreed and registered. He was so anxious to get them that he had them sent air mail. The pilot said that was the first time he'd ever delivered an air mail, registered litter.

—Implement & Tractor

★ ★ ★

Woman's tears are still the most efficient water power in the world.

★ ★ ★

A visiting clergyman in Westport, Connecticut, delivered an entertaining talk at a banquet recently. The following day, he was to address the Rotary Club. Wishing to repeat some of his stories at the latter affair, he asked the reporter at the banquet not to print any of these anecdotes in his paper.

The next day, the account of the minister's speech concluded with:

"Rev. Smith also told a number of stories that cannot be published."

—American Weekly

★ ★ ★

Think how a mother kangaroo must feel on a rainy day when the kids can't play outside.

—Butter-Fat

The ability to speak in several languages is valuable, but to be able to keep your mouth shut in one is priceless.

★ ★ ★

A woman motorist was driving along a country road when she noticed a couple of repair men climbing telephone poles.

"Fools!" she exclaimed to her companion, "they must think I never drove a car before."

—The Balance Sheet

★ ★ ★

A farmer put this sign in front of his watermelon patch: One watermelon in this patch has been poisoned.

Next morning the sign had been changed to read: Two watermelons in this patch have been poisoned.

★ ★ ★

A scientist dreamed up a serum that brought inanimate objects to life. He tried it out on the statue of a great general. Sure enough, the statue gave a quiver and the general, creaking a bit in the joints, climbed down from the pedestal. The scientist was overjoyed.

"I have given you life," he exulted. "Now tell me what is the first thing you're going to do with it?"

"That's easy," rasped the general, ripping a gun from his holster, "I'm going to shoot about two million pigeons."

—Dugout News

Here's Where We Are In Dairying

"New Look" is a bright one, a confident one. It should soon become a prosperous one . . .

Condensed from Iowa Farm Bureau Spokesman

Dan B. Murphy

IT is no surprise to farmers that their business has been undergoing considerable change in the past generation. But many perhaps do not realize that within agriculture, dairying is perhaps changing more rapidly than any other type of farming.

And dairymen can be justifiably proud that their period of evolution is leading directly to an improved income situation — as contrasted to the growing problems which change has brought to most other commodity producers.

What have been the major evidences of change in dairying? They can be listed rather briefly. For more than 10 years, we have steadily declining numbers of dairy farmers, and of dairy cows on all farms. Dairy Economist Bob Strain of Iowa State College estimates that we are losing dairy farmers three times as fast as the decline in the numbers of total farms.

Output Level

But while cow numbers have declined, the remaining dairy farmers have, through breeding and feeding, hiked the output of milk per cow at a surprising rate . . so that total output has remained fairly level.

So at the farm level, we've moved to fewer dairy farms, fewer dairy cows, but much more efficient dairying from both output and profit stand-points.

At the marketing level, too, the industry has advanced. Farmers have sought and found greatly increased markets for their product as whole milk — generally at better prices and returns than can be had from farm separated cream.

Reprinted by permission from Iowa Farm Bureau Spokesman, Grundy Center, Iowa

Certainly marketing cooperatives have moved with (and usually ahead of) the trends in this changing period. Their contributions to dairy-farm income provide the industry with a basic and growing bargaining power for the producer.

Consumer Benefit

Processing, too, has faced the need to develop new patterns. Small creameries, both cooperative and individually owned, have been hard hit by the competition of larger buttermakers. In our state, at least 100 of these smaller units have been forced to close in recent years — and scores of others are currently discussing the combining and merging of the smaller units into plants which will be competitive from a volume standpoint.

Prices of eggs are extremely sensitive to changes in supply. Research indicates that a 10 percent change in supply will result in about a 33 percent change in price, other factors being equal.

From the consumer standpoint, these and other changes within dairying have meant a much better-quality product at a most favorable price. There is much evidence to show that to date at least, the major benefits from industry-wide changes in dairying have gone to the consumer.

But the outlook for dairy producers and processors to cash in on their efforts is excellent. Let's look at some of the "plus" factors:

Surplus Gone

1. In the era of the growing surplus, dairying alone of the major commodities has held output level. With population growth at its present rate, demand has caught up with output and perhaps gone a bit beyond supply . . since the nation has also consumed virtually all dairy products in government hands. Within the past month, the CCC ran out of butter. And within the past week, USDA announced that dried milk in storage is all committed.

2. Quality standards, built laboriously and painfully through the years, have pretty much put dairy foods in the position where consumers take quality as a matter of course.

3. Diet habits have trended toward the high protein foods in general. Thus, while butter consumption is barely holding its own, the other dairy foods have gained nicely: cheese, cottage cheese, ice cream and of course fluid milk.

4. There are several factors which discourage the entry of

many new producers in dairying. Investment requirements are quite high. Labor is difficult to obtain and extremely costly. Many farmers have neither the skills required for operating a competitive dairying enterprise, nor the desire to undertake a project which requires a 7-day, night and morning schedule.

Dairy Farmers Sell

5. Finally, of course, dairy farmers have stolen the march on the rest of agriculture in the development, financing and operation of a strong sales program.

Throughout the nation, dairy farmers are contributing funds from their milk and cream checks around the year in support of the American Dairy Association and its state promotion units. These associations are concerned entirely with sales (not with legislation, quality improvement, or bargaining), and the impact of their advertising, merchandising, research, education and public relations efforts must be credited for at least a part of the industry's success in reaching a supply-demand balance.

Dairying hasn't found all of its answers, of course. Today's efforts will, in many respects, need to be changed for tomorrow's market and output conditions. But dairy farmers, their bargaining cooperatives, their processing units, their legislative arms and their sales forces are working steadily to keep their industry moving upward.

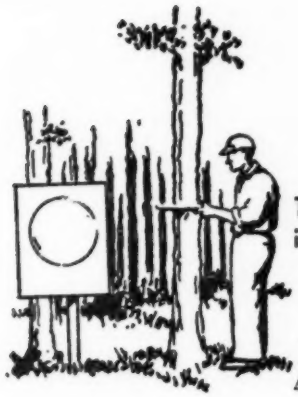
The "new look" in the dairy industry is a bright one, a confident one. It should soon become a prosperous look!

1960 Cattle Outlook

USDA says the two most important factors in the 1960 cattle feeding outlook are these:

1. Total cattle numbers on hand next year will be substantially higher than this year, and much of the increase will be in steers and beef heifers for slaughter.
2. The potential slaughter thus will be considerably greater in 1960 than 1959. How much of the potential actually develops constitutes the key element in price prospects. Usually, transition to larger marketings is slow. Hence, the likelihood is for a moderate increase in slaughter and the beginning of a price decline, but for no drastic changes.

Livestock and Meat Score Board



Six Rules For Selling Timber

Timber can be a good source of extra farm income . . .

Condensed from The Progressive Farmer

James B. Chester, District Manager, American Forest Products Industries, Inc.

TIMBER is a crop, and selling it is just like selling your other crops.

For best results, know what you have . . . plan ahead . . . know what you are selling and where you can get the best price. Your timberland may yield saw logs, fence posts, pulpwood, piling, poles, crossties, fuelwood, and Christmas trees. Like livestock, each product has a price tag, and picking the best market for your trees can make the difference between a lower income and the highest dollar.

Here are some good rules to follow:

1. Expert Advice — If you are a landowner who has never sold timber, you should begin by discussing your problem with a trained forester. There are some 17,000 of them in the country. The forester can cruise the timber and determine steps needed for sound management. He will also advise you on best markets.

2. Select Trees — Mark trees you want cut before you do any cutting. Never clean cut a tract unless you plan to replant it immediately, or to convert it to row crops. What comes back naturally may be worthless trees for which no market exists.

3. What Buyers — Lumber and paper companies usually offer the widest market for timber, but size, quality, and quantity of trees to be harvested will determine your best market. Very likely, you will have some of both. Generally sawmills pay more for larger, clear logs, but for long, straight, gradually tapering trees, wood preservers offer an excellent market. For smaller

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trees usually predominant in thinnings, pulpwood offers the best return.

4. Written Contract — It is always advisable to have a written sales contract. The human mind is faulty, and sometimes forgotten details can lead to misunderstandings and unnecessary hard feelings. This need not be a fancy document, just one in which details are clear and positive.

5. Per-Unit Basis — When it comes to money, you will usually do better to sell on a per-unit basis, rather than a lump sum deal. This is generally fairer to both parties. If more than one buyer is interested, you should get bids.

6. Hardwoods — Don't overlook hardwoods of the right varieties. On good sites, some hardwood species grow as fast as pines and the price tag is as good or better than for pine. Veneer and plywood mills are always in the market for the best butt section of the log. Some trees will produce both veneer and lumber logs, and maybe some pulpwood from the upper portion of the tree. The use of hardwood for pulp by the paper industry is rapidly increasing.

Be not afraid of life. Believe that life is worth living, and your belief will help create the fact.

—William James

6% Interest Can Be 18%

If you borrow money or buy on time payment, plan in advance and check the interest rate. It is very possible to pay three times the amount of interest that was originally planned. For example: You buy a piece of machinery for $5,000 at 6% interest over three years. It might be figured 6% of $5,000 is $300 or $900 for duration of the loan. By adding $900 to $5,000 the total is $5,900. Dividing this amount by three years, lender explains that the loan can be paid off in three payments of $1,966.66.

By accepting this arrangement you are paying interest on money you have already paid back. After your first payment on the principal of $1,666.66, you owe only $3,333.34. Should you be charged $300 interest the second year, you're paying 9% interest on what you owe. It will amount to 18% on the third payment. *Make sure the interest payments drop as the principal decreases.*

—Farm Facts

What Causes Water Belly?

No solution for the rancher's riddle . . .

Condensed from Nebraska Farmer

Larry Mark

HOW can you prevent water belly?

That is the $64,000 question that a lot of ranchers would like to see answered.

You can find as many ideas and theories as you want on how to prevent water belly. There's only one problem — none of these theories seems to work.

And at the same time this malady continues to strike 2% — or more — of the steer calves in a ranch operation.

First of all, just what is water belly? Technically it's called "urinary calculi." It's caused by the formation of a "stone" or "stones" in the urinary tract, according to Crosby Howe, extension animal pathologist at the University of Nebraska.

"This stone," says Howe, "consists mainly of either calcium or silicate compounds, although other minerals may also be present. The stone is formed in the animal's bladder; if the stone is large enough it lodges and plugs passage so that the steer is unable to urinate.

"Usually," he continues, "the afflicted animal will die of uremic poisoning within 4 days to 2 weeks after the stone lodges. Very few animals recover without treatment.

"Generally the stone will stick in the sigmoid flexure — the bend around the scrotum — but it can be found anywhere from the base of the bladder on down through the entire urethral tube."

Mostly In Steer Calves

Howe points out that water belly occurs principally in steer calves. "The urinary tract in a heifer," he says, "is larger and shorter, so she is able to pass the stone successfully."

The main danger period is during fall and winter for steer calves less than 1 year old. "After a steer is a yearling," Howe says, "there's not much chance he'll get water belly. Although

Reprinted by permission from Nebraska Famer, 1420 P Street, Lincoln 1, Nebraska

it has even occurred in mature bulls."

Just what causes the stones to form?

There again you have a question that has a multitude of answers — depending on whom you talk to.

Howe points out that some people feel water belly is caused by a vitamin A deficiency. "Others," he says, "say it is a mineral imbalance. Still others think it is caused by a combination of these factors.

"Actually," he notes, "mineral imbalance is associated with vitamin A deficiency."

Another possibility that Howe mentions is that an infective agent might be introduced in the steer's body at the time of castration. "Or," he says, "another factor might be that cattle don't drink enough water in the wintertime — because the water's too cold. Sometimes feeding large amounts of salt to increase water intake has helped prevent water belly."

Some folks, says Howe, believe that disturbances brought on by weaning will make the minerals precipitate and thus cause water belly.

Variety Of Factors

"Most probably," he points out, "it's caused by a variety of factors — there may be a great number of things that enter into the picture that cause one steer to be affected and let the next one off scot-free."

Water belly isn't a new problem, according to Howe. "It's common," he says.

There are quite a number of ranchers who will agree wholeheartedly with Howe on this point.

"Everybody is getting a few more cases of water belly than usual," says Wally Farrar, who ranches southeast of Hyannis, Nebraska.

"It sure is on the increase," he continues. "We never had it 10 or 12 years ago. Yet last year by the middle of February we had 35 to 40 cases out of 700 steer calves."

Responsibility is like a string of which we can only see the middle. Both ends are out of sight.

Farrar tried feeding his calves alfalfa pellets a couple of years ago and for a time thought he had the answer. "But not now," he says. "And there's no way of telling whether the feed did any good."

To illustrate the lengths to which he has gone to find a cure for water belly, Farrar relates an experience that he had several years ago. "A fellow from

Oklahoma stopped by at the ranch," Farrar recalls.

"Vinegar Cure"

"At the time, we had a couple of steer calves with water belly in the corral. This fellow saw them and said that in Oklahoma they cured it by giving the calves a quart of cider vinegar. Well, we were ready to attempt anything so as soon as he left," Farrar continues, "we rushed to town and bought some vinegar.

"We forced a quart of it down each calf. I don't know if it was the vinegar or not, but the next morning when we came out to look, both calves were dead.

"So you can see," he concludes, "that we've tried just about everything."

Presently, Farrar's method of treatment consists of operating on the calves — cutting the stone out of the urethral tube. (An opening is made under the curve in the urethral tube — the sigmoid flexure, where the stone is generally lodged. Then a small — ¼ inch — incision is made in the tube and the stone is squeezed out.) "We still lose one-third of them, though," he says. "You've got to catch them in time — before the bladder breaks," he points out.

A hot water faucet that leaks 60 drops a minute will waste 200 gallons of hot water a month.

"I can't see what causes it," Farrar states. "They say it's lack of water — our calves are never over a half mile from water. And much of the water comes from artesian wells, so it's not too cold. With windmill-pumped water, we throw the ice out to keep water before the calves.

"We feed 1 pound of cake and 1 pound of ground milo, corn and oats every other day," Farrar notes. "On the intervening days, the calves get all the hay they want.

"It's kind of discouraging," he points out, "to sit up all night in the spring to save a calf and then lose him 7 or 8 months later to water belly. And water belly always seems to pick out the best ones — you never see a poor, scrawny calf with it."

Earl Monahan of the Monahan Cattle Co., located east of Hyannis, Nebraska points out that he has had cases of water belly occur on even a 3-year-old steer. "And in the last 2 years," he says, "we've had three bull calves that were confined in a lot on nothing but dry hay and grain come down with it. I've even seen water belly in calves that were still on the cow — and the cow was on green pasture with all kinds of running water."

But Monahan points out that water belly occurs mostly in steer calves in December and January. "But last year," he says, "we had a lot in December, none in January and then it started up again in February.

More Than Ever

"Last year we had more water belly than we've ever had," he says. "Usually it hits about 2% of our steer calves — last year the figure was up to about 4%. And I still don't have any answer for it."

Monahan operates on the calves that do come down with water belly. The operation is usually successful if it's done in time, he says. But he points out that when the calves are out from the ranch buildings, they're often hard to locate. "And then, too, it works much faster on some than it does on others," he adds.

About 75% to 85% of the calves that are operated on will live, according to Monahan. "But 50% of these don't amount to anything," he notes.

Another method Monahan has used is injections of a muscular relaxing drug to cause the animal to pass the stone. "We used it on one bull calf last year and it worked," he says, "but this year it hasn't seemed to. You have to catch them plenty early in order to have any luck with this stuff.

"I don't think water belly is caused by any one thing," Monahan points out. "I think it's a lot of things combined. But what these things are, I sure don't know."

What causes water belly? How can you prevent it? Those are good q u e s t i o n s — questions which can presently be answered o n l y in one way: "Nobody knows."

But help is on the way for ranchers facing the perennial problem of water belly. According to Howe, the animal pathology department at the University of Nebraska is about to activate a research project dealing with the problem of urinary calculi.

Steers implanted with hexestrol outgained those treated with stilbestrol in Missouri tests. Daily gains for hexestrol steers in one experiment averaged 1.7 pounds per day compared with 1.4 for check lots and 1.6 for stilbestrol.

In a second test yearlings were fed together in the same lot. Hexestrol accounted for a 2.2-pound daily gain, stilbestrol for two pounds, while check steers made 1.9 pounds. —*Better Farming*

A Swindle Many Farmers Fall For

If you have money to invest, don't be the next to fall for this hoax . . .

Condensed from Farm Journal

Lewis E. Davids, University of Georgia

YOU can probably remember the time your father bought $5-a-bushel seed oats with the understanding that the salesman would buy back the crop at the same price. And you know where the salesman was, come harvest time!

Well, the same kind of shysters are still preying on farmers — capitalizing on the desire to make easy money. But some operate by telephone, and their product isn't oats, but fraudulent stock shares.

All of us have moments when that "easy money" looks good and when we might fall for the pitch.

Here' how it could happen to you: You've just come in for supper when the phone rings.

"I have a call for you from New York," the operator says, and you ask yourself who you know there that has died or had an accident.

Then a voice comes on the line to explain that a friend, who prefers to remain unknown, has given your name as one who might be interested in this unusual opportunity.

The Forty-Ninth Star Black Gold Ltd. has secured a lease in Canada near tracts held by Texaco, Standard Oil, Phillips and Shell. They're anxious to have shareholders like y o u r s e l f — sound men, community leaders. The stock is in demand, but they can let you subscribe to 5,000 shares at 50c a share.

The salesman adds that the drillers have reached oil sands and he can't keep the offer open long at that price. He goes on awhile then asks "How about it?"

You're excited, and tempted to say yes. But you decide to think it over, so the salesman promises to send you literature.

During the next two days, you almost forget the call. So you're

Reprinted by permission from Farm Journal, Philadelphia 5, Pennsylvania

surprised when the mail brings a heavy envelope. No return address, but the stamps are foreign, and it's postmarked Toronto, Canada.

A personal letter says that you really impressed the New York investment banker by the intelligent questions you asked. He's convinced that you should be in the organization, and he encloses a beautifully engraved stock option for 5,000 shares at 50c a share.

The letter points out that since *the drill is now into oil-bearing strata, you have just 5 or 6 days* to accept the offer.

That does it. You're sold. But you play safe and write a check for only 2,500 shares — $1,250. You mail it to the Wall Street box number given.

All animals will doctor themselves with dust, grass, water, sunshine and rest when wounded.

Several uneasy days follow. Then a letter brings your certificate and good news. A split has already boosted your holdings to 5,000 shares and the value of your stock by 25%!

A week later, another letter: You have a chance to buy more stock, released by the death of one of the firm's founders. The price is 95c a share, and you can buy one share for each two you now hold. That's 2,500 shares. But apparently the company made a clerical error — the accompanying option is for 5,000 shares. Well, why not take advantage of their mistake? Maybe you'll get by, so you mail a check for $4,750.

Back comes the new certificate, plus more great news from Canada. Oil is spewing out of the test well and the price has jumped to $1.50.

You get a letter each week now. New wells are coming in, and the price climbs to $2 — then higher.

It would be nice if the story could end on this prosperous note.

But this is not just a story of what might happen to you. It's what actually did happen to a friend of mine.

Several months after he bought the stock, he needed money for a family emergency. So, he decided to sell a few shares. He wrote to the Wall Street office, requesting that they buy back 500 shares at the then quoted price of $4 per share. No reply. He wrote again; still no reply. In desperation he tried to phone, only to find no listing.

Even if there had been, he'd have discovered that the company that sells the stock doesn't

buy it back. (Remember the oats salesman?) Stock prices quoted in those weekly letters were wholly fictitious.

Now it's easy to say that this sort of thing couldn't happen to you. But if you want to be sure of that, remember these precautions:

Beware of the phone approach. Legitimate brokers don't do business this way. Work only through a member of a stock exchange.

Deal only in stocks listed on a regular exchange and quoted on the market page of a newspaper. *Don't try to get rich overnight.* If the deal is that good nobody is going to offer it to you.

Remember: Any investment that promises quick, spectacular gains is likely a speculation, not an investment. The bigger the possible gain, the bigger the risk.

Investigate the stock — don't buy only on a tip. Consult your banker or some other qualified person.

It's times like these, when the legitimate stock market is so active, that phony operations thrive. And farmers, for some reasons, seem to be favorite targets.

One Cause of Shipping Fever Found

A major breakthrough in the study of shipping fever, a costly and common respiratory disease of cattle, has been made by USDA veterinairias. A virus that is one of the causative agents of the disease has been isolated by scientists working at USDA's Agricultural Research Center, Beltsville, Md.

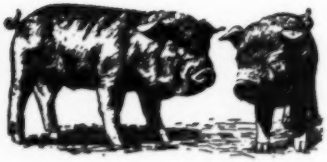
The scientists isolated the virus, designated the SF-4 virus, from nasal mucus of calves showing signs of shipping fever. They produced mild cases of shipping fever by spraying the virus into noses of healthy calves, grew the virus in tissue culture, and produced anti-serum.

Study of the SF-4 virus indicated it is similar to a virus isolated from children suffering from respiratory diseases. It has not been determined that the SF-4 virus can cause these diseases in children, or that the virus from children can cause shipping fever.

The USDA scientists also isolated two other viruses from cattle and calves that had shipping fever and believe many others will be found before an effective shipping fever vaccine can be produced.

—Colorado State University

Management Recommendations For Swine



An intensive study produced these uniform recommendations for all breeds . . .

Condensed from Berkshire News

FOR many years, agricultural groups have issued management recommendations. Common to all was a lack of uniformity.

The adoption of uniform recommendations by the Nutrition Council of American Feed Manufacturers Association, is the result of an intensive study of all available research. The following have been carefully checked by nearly 200 authoritative sources including the nation's land grant colleges and experiment stations and the U. S. Dept. of Agriculture.

These are 21 management recommendations for the sow and litter. The first seven of these practices deal with housing and shelter. They are:

1. A farrowing house temperature of 55 degrees to 65 degrees F. is recommended provided adequate ventilation is obtained.

2. Heat lamps placed in a corner, accessible only to pigs, are recommended especially when the farrowing house temperature falls below 65 degress F. If a heat lamp of 250 watt size is used, it should be suspended approximately 24 inches above the bedding. Condition pigs to doing without the lamp by turning it off during warmer periods or by raising it.

3. Farrowing pens in a central farrowing house or individual farrowing houses should have a minimum size of 6 feet by 8 feet for gilts, and 8 feet by 8 feet for sows.

4. Farrowing stalls or crates should have widths of 20 inches for gilts and 24 inches for sows, and minimum lengths of 6 feet for gilts and 7 feet for sows. The space beneath the bottom board should be ½ the stall width. The recommended minimum width on each side of the stall or crate for pigs up to 2 weeks is 18 inches.

5. Guard rails 8 inches above the bedding and 8 inches from the wall are recommended in

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central farrowing house pens and individual farrowing houses.

6. The farrowing pen or individual farrowing house should be lightly bedded with chopped or short straw or hay, shavings, ground corn cobs, bagasse peanut hulls. cottonseed hulls, oat hulls or other suitable bedding material. More liberal bedding may be used in unheated houses during cold weather provided it is short or fine material that will not interfere with the movements of the pigs.

7. Recommended shade area is 50 square feet per gilt and litter and 60 square feet per sow and litter.

The next four deal with sow and litter feeding and watering space. They include:

8. For self-feeding either in dry lot or on pasture, a minimum of one linear foot per sow or gilt and litter is recommended provided the young pigs have additional feeding space in a creep.

9. For hand-feeding in troughs either in dry lot or on pasture, a minimum of 1½ linear feet of feeding space is recommended per sow or gilt and litter provided the young pigs have additional feeding space in a creep.

10. For watering by automatic cup, provide at least one cup, not less than six inches in diameter or the equivalent, for each four sows or gilts and their litters. (An automatic waterer with two openings should be considered two cups.) For hand watering in troughs, provide at least two linear feet of trough space per sow or gilt and litter. Additional watering space may be required during warm weather.

11. Creep feeding beginning the first week is recommended. The maximum number of pigs per linear foot of feeder space should be 5. The edge of the feeder trough should not be more than four inches above the ground or floor. A maximum of 40 pigs per creep may be allowed.

Creep feeders should be placed close to a water supply, and near the area where the sow is most of the time. They should be inside in cool weather, in a well-lighted place and when placed outside in warm weather should be covered to provide shade and protection from rain.

Some 150 crimes, many quite trivial, were punishable by death, when the Declaration of Independence and Bill of Rights were produced.

The following eight recommended practices are on general management for the sow and litter:

12. When possible, the size of

litters should be adjusted to the number of functioning teats or nursing ability of the sow. Transferring pigs from sow to sow should be done as early as possible. Three to four days after farrowing is usually the maximum length of time that this can be done, unless the odor of the pigs is masked, when it may be possible to transfer at a later time.

13. For large litters, pigs that are to be transferred, or when injuries to pigs or sows' teats are a problem, clipping needle teeth of pigs at birth or the first day is recommended. Only the tips of these teeth should be clipped.

About 85% of America's corn crop goes to the market in the form of meat.

14. Anemia in pigs farrowed in houses should be prevented beginning the first week by making clean soil or sod available, copperas solution on the sow's udder, individual iron pills, or other methods. This also may be necessary for pigs farrowed on pasture, when weather is unfavorable.

15. The age at which litters and sows may be run together should usually be two weeks, although small groups may be put together as early as one week. The age difference between such litters should not be more than one week in a central farrowing house or two weeks on pasture. The recommended number of sows with litters together in a group is not more than four in a central farrowing house or six on pasture.

16. On good legume or legume-grass pasture, allow 6 to 8 sows or gilts and their litters per acre.

17. Castration of the pigs should be done during the first 4 weeks. It should not be done during the three weeks following cholera vaccination. Also, pigs weaned at four weeks or earlier should not be castrated within one week of the time of weaning.

18. Pigs should be protected from infection by worms as well as other diseases by good sanitation. Worming before weaning is not recommended and it should not be done within the three weeks after vaccination with living (virulent or modified) hog cholera virus.

19. Cholera, erysipelas, and certain other diseases are prone to affect swine in various parts of the country. These diseases, where they do arise, can limit other efforts toward efficient pork production. Therefore, veterinary medical advice should be sought with regard to proper methods of vaccination and other disease control measures.

Are You Flying Blind In The Sheep Business?

Production records mean more profit . . .

Condensed from The Shepherd

Dr. A. L. Pope, University of Wisconsin

WHILE many of us just naturally like to have a flock of sheep around, the main reason we do is to make money.

The money or profit we make depends on efficiency, volume and low cost of production per unit just as it does in any other business. This will become even more important in the years ahead.

It seems only logical then that we should keep some kind of a production record or account of each phase (ewe) of our business. This is the only way that we can reasonably eliminate those that are unprofitable while keeping the ones that show a margin above cost. Every business man I know tells me this is fundamental, and sheep men should first of all be good business men.

In Wisconsin we have the Wisconsin Sheep Improvement Program sponsored by the University to help flock-owners do this job. Sheepowners keep an individual performance card of each ewe in the flock and record ear tag numbers of the ewe and lambs, the birth dates and the weight of the fleece at shearing time. University personnel do the rest which includes weighing the lambs and computing a production index on each ewe and ewe lamb. This program has been in operation nine years and has been very successful.

You Can do it Yourself

Any producer can develop his own selection program if certain important steps are followed. First of all, the procedure should be simple and as convenient as possible. You should not try to improve a large number of characteristics through breeding at the same time. The more you do, the slower the improvement of any one characteristic. In our program we have settled on only three — (1) increased growth rate, (2) twinning and (3) wool production. We have left out such things as quality, face covering, color, etc. because the other

Reprinted by permission from The Shepherd, Sheffield, Massachusetts

three seem the most important.

There are some other simple genetic principles that should be remembered. The characteristics we wish to improve must first of all be heritable or transmissible from one generation to the next, or we can't improve them through selection. The above three are heritable, but to varying degrees which must be given consideration.

The record of production of a ewe must be repeatable to some degree year after year if we are to accurately determine whether she is to be culled or kept. It is, and this must also be given consideration.

There are some genetic correlations or relationships between these characteristics which must also be taken into account as well as the economic value of the characteristics. All of these must be combined into what we call a *production index* or a numerical value such as 117 so that we can put them to work in our flock. This is simply a method used to estimate the over-all genetic merit of an animal. The higher the index number, the better the animal. The genetic principles mentioned above are incorporated in the index by adding a certain number of points as the index is computed.

About all a person gains by blowing his own horn is to cause others to avoid him.

1st Step — Identify Sheep

Place an ear tag in each ewe and lamb so that you can tell which lamb belongs to which ewe. These records will be used continuously in sorting ewes and lambs and in detecting any trouble during lactation. Raising sheep in this age without having them identified is like plowing with oxen!

Next prepare an individual record card for each ewe. It should contain space for these items:

1. Ear tag number and birth date of ewe.
2. Yearly wool production and date sheared.
3. Yearling production index.
4. Information on her lambs, such as:
   a) ear tag number and birth date.
   b) sire number.
   c) actual weight at 4 months.
   d) adjusted weight at 4 months.
   e) actual staple length at 4 months.
   f) adjusted staple length at 4 months.
   g) lamb index.
5. Important notes about the ewe or her lambs.

To save labor the lambs in a

flock can all be weighed at one time when the group averages about 120 days of age. This means, though, that some lambs will be 110 days old and some 130 days. To calculate what the weights of these lambs would be at 120 days, we must adjust the weight of the 110 day old lambs up to 120 days and those of the older lambs downward. Then all lambs will have an "adjusted" 120-day weight which theoretically means they were all weighed at exactly 120 days of age.

This can be done by adding all of the actual single lamb weights and dividing this total by the total days of age. This gives the average daily gain of all single lambs, and this is the figure to use in adjusting weights. For example, if the average daily gain is ½ pound then a 110-day lamb should have 5 lbs. added to its weight while a 134 day lamb would have 7 lbs. deducted.

The same procedure should be followed for the twin lambs, and the same for length of wool staple on the ewe lambs. When the lamb is weighed the wool length can be easily measured on the center of the side. This is done in centimeters and is the best indicator we have of future wool production.

Calculating the Index

Suppose we have a two year old ewe that raises twin lambs (a ram and a ewe) that weigh 60 and 64 pounds at 120 days and she shears 8 pounds of wool. Her index is calculated as follows:

62 points—*average* weight of lambs
21 points—because she raised twins
4 points—because one twin was a ewe lamb
6 points—because she is only a 2 year old
24 points—wool credit (8 lbs. X 3)

117 points=ewe production index

If a ewe drops twins but only raises one then she receives 6 points instead of 21. All ewe and wether lambs are credited with 4 points while ram lambs receive none. Two year old or younger ewes and ewes 7 years or older are credited with 3 additional points per lamb.

Redwood trees are thought to secrete a poison or odor that is objectionable to birds and insects, and neither are normally found near them.

Let's calculate a ewe lamb index on a ewe lamb that weighed 72 pounds at 120 days had a staple length of 4 centimeters and was born and raised as a twin.

72 points—weight of lamb
14 points—because she was raised a twin
12 points—wool credit (3 X 4 centimeters)
4 points—because she is a ewe lamb

---

102 points=ewe lamb index

A lamb born a twin but raised a single would receive 7 points instead of 14 and a lamb born and raised a single would receive none as compared to the lamb above which received 14 points for being a twin. There is no point in computing a lamb index on a wether lamb or in measuring the fleece.

But using an index, all the ewes in a flock are given equal credit for the job they have done. They can be rated from best to poorest for culling purposes, and the same can be done with the ewe lambs.

Does it Pay to Know?

Here are typical figures taken from a flock enrolled in the Wisconsin Sheep Improvement Program in 1958.

	Pounds of Lamb at 120 Days	Pounds of Wool (Wool at 62c/lb.)	Value Lambs at 22c/lb.	Avg. Income per
Low 7 Indexing Ewes	431	54.3	$128.49	$18.36
Top 7 Indexing Ewes	1016	72.9	$268.72	$38.39
		Difference	$140.23	$20.03

Special Recognition Given Quality Eggs

Soon, you may be buying eggs with a new USDA grade marking — the words *"Fresh Fancy Quality"* enclosed in the USDA grade shield. This is a new quality designation that identifies eggs produced and marketed under controlled conditions and that meet high standards of quality. To qualify, eggs must be laid by flocks of *uniform age,* must be *cooled* immediately after laying and kept at a specified temperature and humidity setting. *Prompt handling* is also required. This new designation will be used by USDA in addition to the familiar U. S. Grades AA and A for high quality eggs. —*U. S. D. A.*

Tranquilizers For Shipping And Weaning

Although known to have value there are some limitations . . .

Condensed from The Dakota Farmer

EXPERIENCE with tranquilizers has shown them to be of definite value. There are, however, some limitations in tranquilizing livestock and a few cautions to be observed.

Several different tranquilizers are on the market. They differ in potency and dosage and are available in tablet or injectable forms. Two of the most practical uses of either form of tranquilizer are calming nerves before shipment and relieving tension during weaning.

Tranquilizers minimize an animal's reaction to stress. Stress or excitement occurs whenever the animal is exposed to something new. Weanling calves are under stress; so are cattle about to be shipped.

Most owners probably have noticed that when some calves are separated from their mother they walk the fence, bawl, and lose their appetite. This situation may vary somewhat in degree, according to the temperament of the animal. Tranquilizers tend to soften the reaction and allow a more profitable transition in many cases.

Since tranquilizers affect the thalamic region of the brain — a sort of clearinghouse for many nerve impulses — an overdose can cause the animal to be too lethargic. Tranquilizers, rightly used, can short-circuit strong emotions such as fear or pain and prevent them from causing tension, raising the blood pressure, or affecting the body temperature. The drugs modify many nerve transmissions to the brain but do not inhibit the function of brain centers like an anesthetic or narcotic.

It is generally agreed that tranquilizers offer both nutritional and medical benefits. They can increase feed efficiency and rate of gain, and they can reduce stress and serve as a sedative before handling.

Limited trials indicate that they are used to best advantage with cattle and sheep, though some reports with dairy animals have not been consistently encouraging.

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The length of time that the drug continues to work depends on the dosage. Injections sometimes continue in effect for two or more days. Since about 75% of the shrinkage seems to occur during the first few hours of shipment, tranquilizers may have increased value for short hauls.

In one case, 56 head of cattle were shipped 100 miles to market. Half were given seven-cubic centimeter doses of tranquilizer; the other half were untreated. At slaughter time, the tranquilized cattle had a 0.88% shrinkage, while the untranquilized cattle showed a 2.32% shrinkage.

This is more or less typical of the results on short hauls, but specific shrinkage savings can't be guaranteed. Actual savings depend on many variables such as temperament, condition, and fill of animals. Climatic conditions, methods of handling, and drug dosage also enter the picture.

Another encouraging report concerns Colorado calves that were treated with a tranquilizer before being shipped to the Corn Belt. When weighed two days after arrival the treated group averaged about 10 pounds per calf heavier — part of the gain being made during the time in transit.

Food and Drug administration approval has been granted for use of tranquilizers on animals 24 hours prior to slaughter. But this is occasionally abused. Slaughterers report that one lot of 18 choice steers had to be trimmed from one to four pounds from each round where heavy doses of the drug had been administered and had not been absorbed.

Another Colorado test with tranquilizers during weaning brought marked results. Twenty-two bull calves were given tranquilizer before weaning. During the seven-day weaning period, the treated animals averaged about one-third pound per head per day more gain than the untreated control group.

Nebraska weaning tests were less conclusive but did show promise for the drug. The only treatment there which consistently reduced the amount of weight loss to 10 days after weaning was the one in which calves received an injection on the day of weaning and were fed tranquilizers for the following nine days. The researchers agreed that more studies were needed about dosage levels and methods of adminis-

The Pacific Ocean is so large that all 7 continents of the world could be placed in it, and still have room enough left for an extra Asia.

tration before specific conclusions could be drawn.

Information from North Dakota Agricultural College's Veterinary Science Department indicates that tranquilizers appear to be quite valuable in preventing shipping fever. Though, the department intends to make the additional surveys to provide the evidence needed for definite conclusions on their use. Beneficial as they are, treatments can't be expected to replace good management and sanitation.

Trouble with trouble is that it starts out like fun.

Some ways tranquilizers can be misused are suggested by NDAC: "We have seen tranquilizers used in certain sales on nervous animals. It could be a rather embarrassing situation to have someone purchase a rather wild bull that appeared to be quite tranquil in the sale ring and later find that it had been under tranquilization at the time of the sale."

Such misuse of tranquilizers may not always be intentional since some well-meaning sellers may be under the mistaken opinion that just a little more of a good thing will bring better results. But most users agree that the body weight should be the determining factor in the amount of tranquilizer to use. Though, the dosage for weaning calves is sometimes slightly increased to compensate for the heightened excitement and stress. In all cases, veterinarians' recommendations should be closely followed.

New Corn Disease

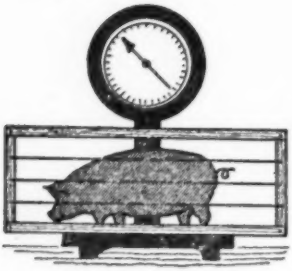
A new and highly virulent disease of corn makes overhead watering a risky business, according to Paul Hoppe, University of Wisconsin plant pathologist.

Hoppe made the world's first reported discovery of a new corn soft-rot last summer. The farmer had irrigated the corn with overhead sprinklers. Later discoveries all point to sprinkler irrigation as the factor favoring soft-rot.

University bacteriologists are now working to identify the bacteria that caused this corn soft-rot. It is probably a common bacterial strain, Hoppe says, but has never been identified. Plant losses of about 10 per cent at Lone Rock indicate very high virulence

—Wisconsin College of Agriculture

Hog Grades — Their Purpose And Use



You will understand hog grades better after reading this article . . .

Condensed from The Poland China World

DO you have a clear understanding of radio market reports?

If you do, you realize there is more to a market broadcast than just the top quotation. Prices of sows differ from those of barrows and gilts. And within each of these classes, prices vary with weight. Live pigs sell by weight ranges, just as pork cuts do. The 200-220 pound hog is called a medium-weight because his weight is mid-way between those that are too light and those that are too heavy to sell at top prices.

But price differences are not confined to weight, for there are both desirable and less desirable hogs within each weight division. These differences are commonly referred to by grade, and it is these grades we would like to define and explain.

The grades you hear about are No. 1, No. 2, and No. 3. There are other grades, of course, but the under-finished and cull hogs normally make up a relatively insignificant part of the total.

The hogs in all three grades, No. 1, No. 2, and No. 3, carry enough fat to make pork tender and tasty. No. 1 has the least fat and most lean. He can be likened to a young athlete in perfect trim. He is the product of the much talked of meat type hog program — is fast-growing, well-muscled and active. Both his fore and hind legs are well apart. His ribs are well-sprung, both his loin and hams are full and firm. All are indications of generous muscling with a minimum of fat. He has a trim appearance.

The No. 2 grade hog has more fat than is needed, and he is only average in muscle development.

The No. 3 grade hog has still more fat — enough more to warrant a third grade. He has the most fat and the least muscle

Reprinted by permission from The Poland China World, Hamilton, Illinois

of the three grades.

The two fundamentals that serve to place a hog in a specific grade are: degree of fatness and degree of muscling.

Grade differences are also expressed in terms of the percent of live weight in the four lean cuts; namely, the trimmed ham, loin and two shoulders, the Picnic and Boston Butt. These are the cuts that contain most of the muscle or red meat in a carcass, and therefore account for a lion's share of the total value. Medium-weight hogs will vary as much as 10% in the yield of four lean cuts of their live weight, ranging all the way from a low of 28 to a high of 38. The average No. 2 grade hog will yield about 33% in four lean cuts. The grading, then becomes one of grouping these hogs into three grades, each of which contains hogs of a similar lean meat percentage. No. 2 grade hogs range from 32-34% in four lean cuts. No. 1 grade hogs yield 35% or more, No. 3 grade hogs yield 31% or less.

For years the majority of the hogs on the market have graded No. 2. Traditionally the market is established on this grade. Thus, the price of the No. 2 grade becomes the base price. The No. 1 grade hog is priced above this figure, while the No. 3 grade hog is priced below. The price differentials change just as they do between grades of any perishable product.

The job of estimating these percentages in the live hog is made difficult because each of the variables, degree of fatness and degree of muscling, are hidden beneath the skin and haircoat of the live hog. A variety of combinations of fat and muscle account for similar live appearances. The trained hog buyer can acquire a degree of accuracy through constant practice and will become more skilled than one who has less opportunity to do this kind of work. These grade factors can be handled with greater accuracy in carcass form because much of the camouflage has been removed. Things the live hog buyer wondered about can both be seen and measured. Likewise, the grader of carcasses need not concern himself with the yield of the live hog.

Yield affects live hog values as much as grade.

Recent agricultural experiments show that de-wormed pigs give a 12 per cent increase in feed efficiency. Translated into dollars this means a feed saving of about $1.40 per 100 pounds of grain, or $2.10 per market hog.

Selecting Beef Cattle For Herd Improvement

Here's what to look for . . .

Condensed from Breeder's Gazette

C. C. O'Mary,
Washington State University

PROPER selection of a breeding beef animal should be made on the basis of its potential ability to improve the herd.

To improve and maintain a good herd of cattle attention must be given to (1) selecting the herd sire (2) determining which cows to keep in the breeding herd and (3) selecting replacement heifers. Although the bull is said to be "half of the herd", remember that "the dam is half of the herd sire." The progress made by a good sire can be lost if attention is not given to the "other half" of the herd.

Selecting The Herd Sire

Selection of the right herd sire is likely to be the most important step you take in the production of either purebred or commercial cattle. The herd sire's job is to improve the over-all merit of the herd. The problem which the breeder faces is what characteristics are to be improved. For improvement from a genetic standpoint a characteristic must be heritable. The traits selected for should have economic value. To expect much improvement in any specific trait the number of traits selected for cannot be very great. For this reason it is important to consider very carefully the items you select for and eliminate those that are neither heritable nor of economic value.

What Is Heritable?

Weight and grade are economic factors that are heritable. Milk production is heritable and is one of the most important factors affecting weaning weight. Heritability estimates have been obtained which indicate feedlot gains to be 45 percent heritable, slaughter steer grades 39 percent and weaning weights about 30 percent. The herd sire should improve the herd in rate of gain and in grade (or type). Performance records are now available on many good young bulls. These

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bulls should be out of good milk producing dams.

Be Sure He's Healthy

Management factors should not be overlooked in selecting the herd sire. The bull should be free from disease. There is always the hazard of getting diseases when a new animal is brought to the farm or ranch. You should select a bull as free from known hereditary defects as possible. The herd sire should be a guaranteed breeder. Semen tests should be made whether the bull is young or old. Old bulls that have been satisfactory in previous years may become temporarily sterile.

Does He Look Good?

Individuality, which includes size, smoothness, conformation and other traits, observed by eye are important since how a bull looks still plays a big part in setting the price. We are constantly looking for individuals that combine beauty with outstanding performance. We should realize, however, that type and rate of gain are not correlated. By selecting for one trait we make no improvement in the other, but both traits can be selected for at the same time. The feet and legs must be good in the herd sire. A calf crop can be lost just because the bull can't move with his cows.

What good is muscle if we lack will? If you lack hustle, what good is skill?

Records Always Important

Records of ancestors, progency and other relatives, if available, should be studied before arriving at a final decision.

In a small herd (single sire) a bull usually is used only two or three years. This is to avoid inbreeding. This means that the resale value of the bull may be a real factor in making the selection.

A good bull that meets your specifications is likely to be more expensive than you have originally planned. Certainly cost delivered must be figured carefully — some of your neighbor's bulls may be your best buy.

Determining The Cows To Keep

Only about 80 percent of the cows in a herd this year will be retained for another year. A cow that is already in the herd is replaced only when it can no longer do a good job or when a better cow can be secured to replace it. Because of one reason or another about 20 percent of the cows are replaced each year.

Consider Final Product

Since the calf is the product to be marketed and represents the income, it seems only fair to appraise the cow in terms of the

calf (or calves) produced. When comparing two cows on the basis of calves produced, certain things must be realized to make a fair comparison. Mature cows wean heavier cales than either young or old cows. Calves not of the same age must be adjusted to a constant age. Bull calves are heavier than heifers and an adjustment is necessary. After the adjustments are made the cows are considered to be on a more comparable basis.

From the information given in the table at the end of this article one could select the cows to keep on the basis of their production and on their type or other characteristics. However, if you select on type alone and eliminate the bottom four cows (nos. 1, 5, 6 and 9) the average type has been increased to 84.4 but production is 400.4 lbs. If you select on production and eliminate the bottom four (nos. 3, 5, 6 and 11) the production level has been increased to 411.2 lbs. and the type average is 83.8. Now let us take a look at the notes.

Use Your Records

If these were not present we might do a reasonably good job of culling on the records and still have trouble producing a high percentage calf crop. In a small herd the herdsman may remember the things listed in the notes and take these into consideration when culling, but written records help prevent errors. Perhaps you could justify culling the cow herd on these notes. If only four cows are culled which four should it be? Number 1 has a wild disposition. This is an undesirable trait as it gives trouble and costs time in handling the cattle. Someone could get hurt. Number 2 may not be able to produce another calf since she is crippled and getting old. Number 6 is small in size and after three calves is not likely to grow much more. Number 9 had a bad udder. This is not likely to improve. Number 11 was open when pregnancy checked. Pregnancy check at weaning time should detect open cows. A wintering bill will be saved if this cow is culled. Number 16 has exceptionally large teats and at first the calf requires help when nursing. If we cull Nos. 2, 6, 9 and 11 the average production of the remaining cows is 401.5 and an average type score of 83.8. One thing that becomes apparent is that we have

A check on the prices of eggs and fishing worms in southwest Virginia brings to light the fact that night crawlers are selling for 10 cents a dozen more than eggs.

not improved production average or type.

Number 6 would be culled for several reasons, but a decision on the others might vary somewhat from farm to farm. Now, however, it becomes increasingly clear that exceptionally good heifers must be used as replacements as this is the main hope for herd improvement.

Selecting Replacement Heifers

Generally about 50 percent of the heifers are required for replacement. In the above example only about eight or nine heifers would be expected and half of these would be needed to replace the four cows culled. There were nine heifers. In small herds the sex ratio may be off from the expected half males and half females. There are six cows that rate above average on both type and production. Only two of these had heifers. These were Nos. 2 and 7. We now need the performance records and type score (and any other available information) on the heifers to make the final selection.

Pelleted roughage increases feed intake and increases gains, especially in calves and lambs. It also decreases waste or loss, increases utilization of hay and straw, and can be handled and stored more readily.

Set Up A Standard

We might set minimum culling levels and not use any heifer with a grade lower than average choice and all heifers be required to weigh at least 750 pounds at 13 months of age. When we have done this we may have only four heifers left. We could change our standards to 800 lbs. weight and high choice grade, but we might not have sufficient animals qualifying.

Average life expectancy for a child born in the United States is now 69.6 years, according to the National Office of Vital Statistics. That's an 11-year increase over the 1936 life expectancy.

An index could be calculated for each animal taking into consideration the traits desired, then select on the best index value down as far as needed. Feed efficiency, where possible to obtain, would be a trait of economic importance which should be incorporated into the index.

The above example of selection in a small herd shows the problems encountered in herds large or small. This illustrates that every breeding animal in the herd must receive careful con-

sideration if maximum progress is to be obtained.

The following table illustrates the actual average production of seventeen unselected cows as explained in the article.

PRODUCTION RECORDS (Adjusted for Age and Sex of Calf and Age of Dam) AND TYPE SCORE OF 17 COWS.

Cow Number	Number of Records	Average Weaning Weights (lbs.)	Type Score of Dam	Notes
1	4	434.2	81	Wild disposition
2	7	429.2	84	Crippled
3	2	372.5	83	
4	6	411.5	88	
5	5	373.0	81	
6	3	351.6	80	Small size
7	3	443.3	84	
8	5	372.4	85	
9	3	443.0	80	Bad Udder
10	2	378.5	84	
11	2	364.0	86	Open
12	6	403.3	85	
13	6	376.0	83	
14	2	385.0	84	
15	2	434.0	85	
16	6	416.6	82	Big teats
17	6	419.1	84	
AVERAGE		402.6	83.5	
Average if four low producers culled		411.2	83.8	
Average if four lowest type culled		400.4	84.4	
Average if nos. 2, 6, 9 & 11 culled		401.5	83.8	

Contrary to popular opinion, hens kept in continuous darkness for five weeks continued to lay eggs. California researchers found that some hens did cease egg production, while others, previously pausing, started to lay again. Hens that paused for no longer than five days, laid at a rate of 60 and 77 percent in two tests.

Where To Start On The Farm Problem

We must attack on many fronts . . .

Condensed from Wallace's Farmer

Al Bull

RISING farm production has swamped the domestic food market and overflowed into a huge government storage program.

At the same time, declining farm prices plus rising operating costs have put a squeeze on net farm income.

There's no single, easy cure for an ailment so complex. The only real answer is to attack the problem on several fronts at the same time.

The attack has two major areas: (1) building bigger markets, and (2) reducing supply.

We all prefer the first. But efforts in this direction alone will not be enough. However, they can whittle down the size of the surplus.

Bigger Markets

Here are steps we can take to move more farm products:

1. Use a food stamp plan, or other means, to distribute surplus foods to needy people.
2. Continue research on non-food uses for farm products.
3. Turn consumers to foods requiring more agricultural production resources. From a breakfast of corn flakes to one of bacon and eggs, for example.
4. Boost exports. This offers the greatest hope — if food is tied to economic planning (including education) in under-developed nations. Such a move requires long term, rather than year-to-year food commitments.

Even if these possibilities were all pushed to their practical limits, they will not handle our average annual surplus. So supply control of some sort is the likely companion to the above measures.

In recent years, most of our supply control has been the storage of grain to keep it off the market. Storage costs zoomed as the grain piled up. Most folks now realize that storage without

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strict production controls gives only temporary relief.

The best way to reduce output is to transfer some land, and capital from agriculture to other uses. Or let some of these inputs lie idle.

Low prices can force the transfer or idling of these inputs. But this method soon bankrupts even good farmers, and depresses the whole economy. So it is better to encourage, rather than force, such changes.

Long Run Supply Control

The surplus problem threatens to be with us for many years to come. So at least some of the adjustment should be long range.

Fifty years ago people never thought of doing the things they do today. That's why they didn't do them.

Here are some long range steps we can take:

1. Increase vocational guidance and counseling. This could help steer capable farm boys with an opportunity to operate an adequate unit into farming. It could guide those without this opportunity into occupations where they will be better paid.

Earl O. Heady, director of the Center for Agricultural and Economic Adjustment in Iowa, put it this way in a recent talk:

" . . . We predict for a sow what she will be worth in the future; or we can tell her what she is worth at a half dozen different markets. But we don't predict for a farmer's son his worth at different locations and in different occupations.

"Which is more important, the sow or the boy?"

2. Improve the reporting of job opportunities thruout the nation by state employment services. The best jobs may be outside the local community, even outside the state.

Suppose a young fellow on an unprofitable farm wants to take a job as a mechanic. It would help if his local employment office could tell him of openings in Des Moines, Cedar Rapids, Los Angeles, and Detroit, as well as in his local community.

T. H. Schultz, economist at the University of Chicago, has even urged a direct subsidy plus vocational training for farmers who want to get non-farm jobs. He calls it "homesteads in reverse."

3. Encourage industry in small communities. Some folks on small farm units have trouble making ends meet. Part-time work provided by industry is the happiest solution for those tied closely to their farm and community.

4. Educate rural people on al-

ternative investments. Stocks, bonds, and non-farm real estate may bring higher returns than new equipment or more hogs.

5. Emphasize business analysis, long term outlook, and agricultural adjustment in extension service activities. The better folks understand what is happening, the better they are able to adjust to the changes.

Nearly all the farm outlook information is for next week, next month, or at most, next year. Yet many farm decisions, including the decision to farm, cover a much longer term. We seriously need 5, 10 and 20-year outlook information.

6. Develop more land for recreation. Shorter work weeks and higher incomes have increased the desire for outdoor fun. People, as a group, seem willing to pay for it, too.

Unfortunately, these long term steps bring results slowly. They will do little to solve the problem next year — or even in the next 5 or 10 years.

So direct, short run measures for supply control are called for. These measures must, as far as possible, work in harmony with the long term efforts outlined above.

Of the inputs going into agriculture, land is probably easiest to remove. In the past, we've made some move in this direction but with programs that didn't get the job done.

Short Run Supply Control

Marketing quotas, acreage allotments, and soil bank are aimed at supply control by reducing the acreage in production.

Both marketing quotas and acreage allotments have been unpopular with most farmers. Yet stiff cross-compliance rules are necessary to make these programs work. They also tend to keep production from concentrating in areas with lowest costs per unit.

Production payments are mostly a means of transferring income to farmers. This method may have merit in short run situations, but it does not attack the heart of the problem.

Fertilizer use has reached an all-time record. An estimated 24 million tons were used in the U.S. in the year ended June 30 — about 8 per cent more than in the previous year.

A soil bank program seems most acceptable to individual farmers and to groups which must get behind any program that is to succeed.

Coupled with soil bank could be programs for additional recreation areas and other programs to shift land to less intensive use. From pasture to forest or from

wheat to pasture are two examples to use.

A whole-farm soil bank is most effective in reducing output. If only part of the farm is taken out of production, labor and capital formerly used on the retired part goes to increase output of the remaining acres.

The whole-farm soil bank also encourages some older farmers to retire early. This reduces the size of the agricultural labor force.

Another step we can take soon is to trim government programs which increase agricultural output.

Reclamation projects bringing new land under irrigation are out of step with the times. Such work should be delayed until the extra production is needed.

Parts of ACP could be dropped. Liming, tiling, fertilizing, and similar practices are output-increasing rather than soil-conserving.

The soil-conserving practices of ACP could be retained and justified on a general welfare basis. The same goes for our extensive research and extension service setup.

Combined Attack

A deliberate, overall program calculated to strike the farm problem at its core has been delayed too long.

- *Let's take all practical steps to expand our markets.*
- *Let's get started on long range measures to make farming as profitable as other occupations.*
- *Let's use short term measures that are consistent with long range goals to bring about the adjustment needed as quickly as possible.*

Labor Crucial To Poultry Flock Size

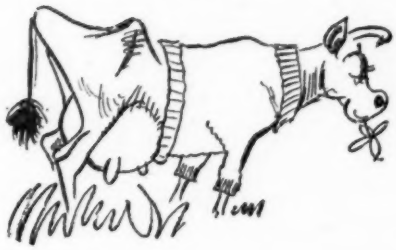
Labor is crucial in determining poultry flock size. Purdue University poultry scientists studying cost economies on 47 poultry farms, reached this conclusion.

Cost economies on these farms were basically the result of declining labor costs per dozen eggs, the researchers report. Therefore, if a laying flock has to compete for labor with other enterprises, or if labor has to be hired, then a laying flock should be at least 800 birds.

If, however, low-cost, unused labor is available — and especially if low-cost poultry housing and equipment are also available — then flocks smaller than 800 birds can be justified, the staff members add.

—Purdue University

Infertility In The Cow



Irregular breeding causes large losses. An English author discusses the problem . . .

Condensed from
Farmer and Stock Breeder

D. L. Stewart
Reading Cattle Breeding Center

PROBLEMS arising from infertility or delayed breeding in cattle are well known to stockowners.

When they view the subject from their practical standpoint, they are perhaps disappointed to find that there has been no major development within the last two or three years. Even such a simple fact as the incidence or frequency of delayed breeding cannot be stated with accuracy.

Approximately 60 per cent of cows and heifers will calve to their first service and 90 per cent will be pregnant if up to three services per animal is allowed. It can be seen from these figures that 10 per cent of cattle give breeding trouble in terms of returns to service, and to this must be added delays caused by cows and heifers failing to come on heat.

Of these troublesome animals, 5 to 10 per cent have permanent damage to their reproductive organs and will never breed.

The major problem, however, arises from animals whose breeding abilities have been lost temporarily.

The biggest change in cattle breeding in recent years is the widespread use of artificial insemination.

The overall results from artificial insemination differ little from those obtained by natural mating, but there is an advantage in that there is control of the semen used and so bulls of low fertility are not employed.

A significant fact has emerged through A.I., namely that it is not possible in a large group of cows or heifers to obtain appreciably more than 60 per cent to calve to one service.

Individual herds may do better or worse than this for a period

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but in the main this level of fertility is constant. There is no known explanation for this but the subject is under active investigation.

Formerly is was believed that most infertility was the result of failure to obtain fertilization but now it is known from experimental work that with fertile bulls the fertilization rate is over 90 per cent and that the returns to service result from the death of the fertilized egg.

After 23 Days

In practice this means that there are varying intervals between the time of service and the recurrence of heat. In fact, it has been observed, mainly from A.I. data, that two out of three cows or heifers that return to service do so after a varying period which is greater than 23 days.

Dogs turn around before lying down, because, (it is thought), their wild ancestors thus had to tramp down grass to provide a bed for the night

Early death of the embryo occurs at all levels of fertility but is more marked when the fertility level is low and, as a result, there are the increased frequency of delayed returns to service during an outbreak of infertility that are readily noticed by the stockowner.

Finally, A.I. plays another important part in the control of infertility in that all bulls standing at A.I. centres are under rigid veterinary supervision and so are free from venereal infections.

When it occurs, infertility of an infectious nature is the most serious form because the whole or greater part of a herd is liable to be involved. Fortunately when the casual organism has been identified and studied, the method of control is usually found. A good example of this was trichomoniasis, a disease that threatened to cause serious losses about 15 to 20 years ago but was soon brought under control and has apparently been eradicated.

How It Is Spread

Vibriosis or *vibrio fetus* infection, which is spread by the venereal route, has a similar story. The bacteria causing the infertility having been identified, progress was rapid and led to the development of a mucus agglutination test, which allowed the presence of the infection to be identified in a herd.

Then it was shown that an accurate diagnosis could be made in the bull by mating him to a vibrio-free heifer and recovering the *vibrio fetus* organism from the genital tract of the heifer.

Successful treatment of the bull by the use of antibiotics followed, through it is still a wise precaution to test-mate infected bulls for freedom of infection after treatment.

Antibiotics can also be used for the treatment of cows and heifers, but since no large-scale field trials have been undertaken it is not possible to guarantee that treatment of females can be adopted successfully as part of an eradication programme.

The practical solution is to serve the cows in a vibrio-infected herd by using A.I. from a clean bull and to serve the maiden heifers similarly or naturally using a maiden bull. The herd should be maintained in two parts for mating, until the disease has been eradicated.

Brucellosis (Contagious Abortion) is not primarily a cause of infertility but, as the name of the disease implies, of abortion in cattle. However, when the disease is active, fertility is usually subnormal.

Although individual infertile animals may respond to treatment, the obvious solution is the control of the brucella infection. This can usually be done by the use of vaccine in heifers between the ages of six and nine months.

It is essential to take normal hygienic precautions, namely to isolate aborting females, destroy any aborted or dead calves and foetal membranes and not to allow such animals to return to the herd till all discharges from the womb have ceased.

Herds that are apparently free from the disease can easily have it reintroduced from neighboring herds.

Factors associated with herd management have undoubtedly an influence on fertility. These factors are difficult to define but their existence is illustrated by the fact that in small herds, up to 10 cows, the level of fertility

The tail of Hottentot sheep often weigh as much as 70 to 80 pounds.

obtained by A.I. centres tends to be higher than in larger herds.

The Explanation

The obvious explanation is that small herds are usually under the direct supervision of the owner and that much more attention is paid to the individual cow.

This problem will increase with the present tendency to reduce the number of staff in relation to the number of cows milked.

Heifers should be watched carefully for heat when not being fed; and not merely from a

tractor pulling a trailer of kale across the field. Cows that are housed should be turned into a yard and observed for a reasonable period.

Good record-keeping of the dates of calving, heat and service, plus the intelligent use of these records, forms the basis of good breeding management. Regular examination for pregnancy between the sixth and ninth week is helpful.

The effect of nutrition on fertility is very complex and is not as yet well understood. Malnutrition can be responsible for the failure of heifers to come into heat during the winter months.

Where no obvious cause of a herd infertility problem exists the feeding of the herd should be investigated. There is increasing evidence that disturbances of the dietary intake of calcium, phosphorus, manganese, copper and iodine can affect the fertility level.

Further investigation is needed into this subject but for the present it is a reasonable policy to keep the minerals in the diet balanced. Therefore feed correct quantities and use only a mixture of which the analysis is known.

Genetic studies have shown that inheritance plays only a small part in the total infertility problem and generally there is no need to attempt to select breeding stock on a fertility basis.

The fact that the A.I. service tends to produce a level conception rate and that the bulls used are free from infection, has undoubtedly lowered the incidence of infertility. Good breeding management together with regular veterinary consultation should keep the problem of bovine infertility under reasonable control.

Thish Is Chow?

An Animal Alcoholics Anonymous may be in the offing, if a recently developed feed supplement gains widespread acceptance. One of the major components of this new feed additive is ethyl alcohol.

Tests of this additive indicate that the alcohol speeds rumen fermentation and the rate of cellulose digestion. Consequently, cattle and sheep are better able to utilize the grain and roughage eaten. It is hoped that animals fed on this supplement will reach markets more quickly and in much higher quality. At the packing plant, alcohol-fed animals should grade out higher, have better flavor, and be more tender.

—*The Hoosier Farmer*

Should Dairy Cattle Be Grain-Fed During Their Dry Period?

This Cornell University trial tells how to feed . . .

Condensed from Butter-Fat

G. H. Schmidt, Cornell University

DO dairy cows require grain during the dry period, or is roughage alone sufficient for maximum production?

The dry period is essential to build up a cow's body resources for the next lactation; it should comprise 6 to 8 weeks for high-producing cows and can be somewhat shorter for low producers. Since no clear-cut answer has been found to the question of feeding during this period, some cows are extremely thin at calving time, while others are excessively fat. Obviously, this is one of the most important aspects of dairy cattle feeding and management. Furthermore, many dairymen believe that heavy grain-feeding before and shortly after calving results in more edema, or udder congestion, than does light feeding.

To obtain more information on this feeding problem, a 2-year experiment was conducted at Cornell University. Sixty-three cows of 4 breeds were used from the University dairy herd. These cows were placed on one of 3 levels of grain feeding 8 weeks before their expected calving dates. One group of animals received no grain during the dry period, a second group received 6 pounds of grain daily, and a third group received 15 pounds of grain daily. These are designated as the low medium, and high groups, respectively. The cows received all of the good quality mixed hay they would eat and corn silage was fed according to body weight. In this manner, extreme dry-period feeding regimes could be compared with the usual recommended practice of feeding 6 to 8 pounds of grain daily during the dry period. After calving, all cows were treated the same. Hay and silage were fed the same as before calving. Ten pounds of grain was fed on the day after calving and the amount fed was

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increased one pound daily until the cows received the amount required for their production. Thereafter, the amount of grain fed was changed weekly according to the cow's production.

The cows that received the high level of grain during the dry period gained considerably more body weight during this time and lost considerably more weight in the first 12 weeks after calving than those in the other 2 groups. The results are given in the accompanying table. The weight losses at the time of calving were approximately the same in all groups.

One out of every 16 employed persons in the U. S. works either directly or indirectly in the dairy industry.

Cow Production

The production of these cows is also given in the table. It can be seen that the high group produced slightly more milk and slightly less butterfat than the other 2 groups. The butterfat tests of all 3 groups were approximately the same. The feeding of 704 pounds of grain to the cows in the high group during the dry period resulted in only 145 pounds more milk, as compared with the low group which received no grain. Slightly less hay was consumed by the high group during the dry period and the first month after lactation. It was found also that the cows in fat condition at the time of calving produced no more milk and had no higher butterfat percentage than cows in moderate condition. The whole question of dry-period feeding, then, centers around the condition of the cow at the time she is dried off. Thin cows require some grain during the dry period (about 6 to 8 pounds daily) in addition to good quality roughage; cows in good condition require no additional grain.

Body weight changes and milk and fat production of cows fed different levels of grain during the dry period

	Dry period feeding groups		
	Low	Medium	High
Weight gain per cow during the dry period (lbs.	41	60	98
Weight loss at calving (lbs.)	161	141	153
Weight loss during the first 12 weeks after calving (lbs.)	52	72	144
Lactation production per cow			
Milk (lbs.)	12,022	12,005	12,167
Butterfat test (%)	4.06	4.07	3.99
Butterfat (lbs.)	488	488	485

Udder Edema Ratings

Udder edema ratings were made by 3 persons on the day of calving and 7 days after calving. It was found that all groups had about the same amount of edema, regardless of the level of grain fed during the dry period. A comparison of cows fed differ-

ent levels of grain during the 2-year study indicated that cows had about the same amount of edema both years. The severity of udder edema appears to be an inherited condition that cannot be markedly changed by feeding. This experiment also showed that udder edema is associated with production, and not with the fatness of the cows. High-producing cows have more edema than low producers, but fat cows at calving have no more edema than thin cows.

Disease Incidence

Blood samples were taken from the cows throughout the experiment. It was found that all cows had nearly identical blood sugar and blood ketone values after calving. This means that no one group was more susceptible to ketosis than the other groups. There were also no marked differences in the incidence of ketosis or other diseases between groups.

Feeding Recommendations

From this experiment, the following practical feeding recommendations can be made: Cows do not require grain in addition to good quality roughage during the dry period if they are in good body condition when they are dried off. Cows in thin condition should be fed some grain during this period. The feeding of large amounts of grain during the dry period will not increase the severity of udder edema. Putting cows on full feed immediately after calving will not increase the severity of the edema nor cause the cows to go off feed.

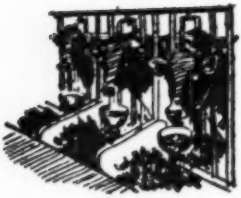
New Self-Propelled Corn Planter

University of Wisconsin farm engineers are building a self-propelled machine that plants corn in the wheel track four rows at a time.

Floyd Duffee, University agricultural engineer and one of the designers, says the new machine is a self-propelled implement carrier. He describes it as looking somewhat like the self-propelled windrower now on the market. As a matter of fact, the new carrier can be adapted to function as a windrower covering a swath of 12 feet or more. A third adaptation for the carrier is as a 13 to 14 foot grain drill. The adaptations, Duffee says, are as easy to make as changing mounted attachments on a conventionl tractor.

The new machine has four large wheels in line across the front. Each is a drive wheel and carries an equal part of the weight of the implement carrier. This design allows the machine to make similar tracks for each row being planted. —*Wisconsin Extension*

Grain Mix Know-How



Learn about the basic facts in grain mixes . . .

Condensed from Western Dairy Journal

CHANCES are you will be feeding grain to your cattle somewhere along the line this year — to young calves, producing cows, heifers on poorer quality pasture or in fitting for show.

You may use a simple home-grown mix of barley, oats and linseed meal or use a commercial dairy mix with a long list of ingredients like cottonseed meal, rolled barley. wheat bran, beet pulp cane molasses and others.

Whatever mix you are using, just how much do you know about each of the feeds that go into your mix? For instance:

What is copra meal? What precaution should you take in buying screenings? Which ranks first as a source of energy but lowest in protein — barley, corn or oats? What is the highest protein plant product — cottonseed, soybean or linseed meal? What feeds would you use to lighten a concentrate mix? What is the chief difference between beet molasses and cane molasses?

Now let's find some answers.

To begin with, concentrates can be divided into two groups — those that are whole or ground seeds of plants and those that are plant and animal by-products. Naturally, there are many feeds in each of these groups but let's talk about the ones most often used in the western states.

Plant Seeds

Corn ranks first among the grains as a source of energy but it is also the lowest in protein. It is most palatable of all feeds but also one of the heaviest. If you feed more than 5-6 lb. a day, mix it with lighter feeds such as oats or bran.

Barley is slightly less in energy than corn but has more protein and in feeding trials has proved to be about equal to corn for milking cows. It too is a heavy feed and if you feed it in large quantities, mix it with lighter feeds.

Oats can be fed alone in any

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amount due to its lightness. Because of the hulls it contains about 12% less energy than corn. This is a good one to use to lighten your concentrate mix.

Wheat is used for feed in years of low prices and frosted and shriveled wheat not suitable for milling is used all the time. It too needs to be mixed with lighter feed.

Sorghums — kafir, milo, hegari, feterita and others — except the sweet sorghums, rank with corn in their make-up and feeding value. They are not quite as palatable as corn.

By Products

Wheat bran, made from the outer coating of the wheat kernel, is one of the most popular dairy feeds. It has a laxative effect and is bulky in nature making it especially valuable for cows just before and after calving and on official test, also excellent for calves and heifers. Use it to lighten your heavy concentrate mixtures and as one of your best sources of phosphorus. In a mix, bran can be substituted for oats, partially or in total.

Barley by-products (Brewers' grains) are fed both wet and dry and can take the place of oats or bran in the ration. Mix it with more palatable feeds and if you feed wet brewers' grain be sure not to let it decompose in the mangers, as the odors produced can affect the milk.

Cottonseed meal is made from the residue left when cottonseed oil is extracted from cottonseed It is one of the most economical and widely used sources of protein supplement.

Flax seed by-products (Linseed oil meal) is the residue left when oil is extracted from flax seed. It varies from below 30% to over 37% protein and also has value for its laxative effect. Because of its popularity it is often a more expensive source of protein than some other protein supplements. You will buy this one on the basis of its protein content.

Soybean oil meal is the residue left when oil is extracted from soybeans. It contains 40-48% protein and is rated as the highest protein plant product.

Coconut oil meal (also called copra meal) is by-product from the production of oil from dried coconut meat. It has more protein than wheat bran and is rated

21 different chemical compounds are required by most plants for normal growth.

an excellent dairy feed. Feeding limited amounts of the meal you will get firm butter of excellent quality, but if you feed more than 3-4 lb. per head a day you

may find the butter too hard.

Rice bran consists of the bran and germs removed in milling of rice for human food. It is similar to oats and wheat in protein content but has decidedly less than wheat bran. Too high a proportion in the mix will cause soft butter.

Screenings vary in composition and contain large amounts of broken seeds together with some weed seeds of high feed value. A tip here is to buy screenings only on the basis of their chemical analysis and never if they contain noxious weed seeds or seeds that produce off flavors in the milk.

Beet pulp is the dried residue of sugar beets after sugar has been extracted. It's valued highly for milk cows and has about 10% less energy than corn. Use it dried or soaked in water or molasses.

Molasses comes in two kinds for livestock; cane molasses, by-products from making cane sugar and beet molasses, by-product from making beet sugar. Chief difference between the two is that beet molasses is much more laxative due to its salt content and must be fed more carefully. Your greatest value of molasses is its appetizing effect.

When it comes to figuring a balanced concentrate mix to go along with your roughage, use your government bulletins, feeds and feeding textbooks and the advice of your farm advisor or vo-ag instructor. Trick of the trade is to make maximum use of home grown feeds and feeds that are cheapest in your area.

Knowledge of individual feeds will make you a better dairyman all the way around.

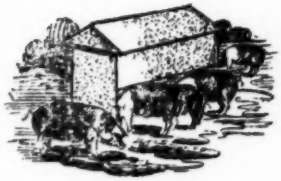
Brahman Origin

The American Brahman, now fourth in numbers of the major beef breeds in the United States, is unusual in appearance and in origin. The other three breeds originated in the British Isles and are commonly referred to as "British" or "European" breeds.

The Brahman was developed in the Southern United States by blending several types of cattle from India into a single breed.

In some parts of the world all humped cattle are called "Zebus" or "Cebus". However, the American Brahman, although similar in general appearance, is more beefy, more docile, faster maturing and usually larger than other humped types of cattle. In the United States the word "Zebu" is used to designate those humped cattle which are not American Brahmans.

Pigs Gain Faster On Pelleted Feed



Latest information on pelleted feed for swine . . .

Condensed from
Ohio Farm and Home Research

E. A. Rutledge

THE hog producer must constantly strive for greater efficiency in his farming operations.

Estimated feed costs represent approximately 80 per cent of the total cost of producing 100 pounds of pork. With this in mind an experiment was conducted comparing the performance of pigs fed a protein supplement in either meal or pelleted form free-choice with shelled corn, or a complete mixed ration in either meal or pelleted form.

Hogs on Concrete

Fifteen pigs, approximately nine weeks of age, were assigned to each of four lots on concrete. The complete mixed ration contained 14.5 per cent protein up to 120 pounds and 12.5 per cent protein from 120 pounds to market weight.

Pigs fed the complete ration in pelleted form gained 0.1 pound per day faster than those fed the same ration in meal form. Pigs fed the pelleted complete ration required 20 pounds less feed per hundred pounds of gain.

The pelleting of the protein supplement fed free-choice with shelled corn did not appear to influence the rate of gain from weaning to 120 pounds but increased gains 0.1 pound per day during the period from 120 pounds to market weight. Nineteen pounds less protein supplement were eaten per hundred pounds gain by the pigs fed the pelleted supplement during the early growing period. However, more of the pelleted protein supplement was eaten from 120 pounds to market weight so that a net saving of only five pounds of supplement was associated with this method of feeding for the entire growth period.

Corn Intake Varied

Pigs fed the meal form protein supplement consumed 4.71 pounds of corn for every pound of protein supplement whereas those fed the pelleted supplement consumed 5.21 pounds of

Reprinted from Ohio Farm and Home Research, Ohio Agricultural Experiment Station, Wooster, O.

corn for every pound of protein supplement.

Pigs fed the complete pelleted ration gained nearly 0.2 pound per day faster than did the pigs fed the protein supplement in the meal form with shelled corn.

It is possible to achieve 90 per cent or more decontamination of agricultural land from radioactive fallout by raking off straw mulch, removing sod, or scraping off surface soil, U.S.-D.A. research workers have found.

There was little difference in cost per unit of gain between the meal and pelleted forms of either the complete ration or the protein supplement. However, pigs fed the protein supplement either in the meal or pelleted forms with corn gained more economically than those fed the complete mixed rations in either the meal or pelleted forms.

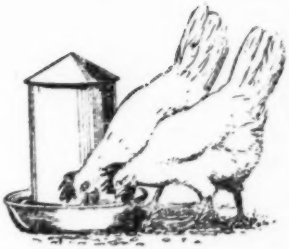
For the average swine producer the feeding of corn and protein supplement free-choice is usually the simplest type of program to follow. The efficiency of this method of feeding will vary, however, depending upon the conditions on the farm, such as age of pigs, palatability of the protein supplement and the palatability of the corn used.

Questions are still being raised as to the pig's ability to adequately balance it's own ration, particularly at an early age. A method that is frequently suggested is to feed a complete mixed ration until the pigs weigh from 70 to 80 pounds. After that, it is largely a matter of choice as to whether a complete ration or corn and protein supplement is fed.

Dieters who omit milk and dairy products from the reducing diet throw away their most important ally to healthful weight reduction. University of Illinois nutritionists say milk does more for the reducer than any other single food. It contains high-quality proteins, minerals and vitamins that are essential to a low-calorie diet.

The swine producer will need to balance the possible advantages of feeding the mixed or pelleted feeds under his particular farm conditions against the additional cost of these feeds in the mixed or pelleted form.

RATION	Average daily gain	Feed per 100 lbs. gain
Complete ration:		
Meal form	1.72	326
Pelleted form	1.83	306
Shelled corn with Supplement:		
Meal form	1.63	316
Pelleted form	1.68	314



Lights Boost Production

One of the highlights reported at the recent Poultry Science meeting . . .

Condensed from Poultry Tribune

CURRENT recommendations of 14-hour light for laying hens may not be getting the biggest possible production from the birds, Frank A. Ryan, University of Connecticut, reported at the Poultry Science Association meeting held at Iowa State University,Ames, Iowa, in August of this year.

Ryan said that all-night lighting of birds increased average lay per hen 4.4 eggs during the year-long Storrs egg laying test. To learn the merits of 14 hours versus all-night lighting, each pen of 26 hens was divided in half with 13 hens getting 14-hour light and 13 hens all-night light.

Most significant result was the fact that slightly more than three-fourths of the production increase came during the first 12 weeks. During this time, each hen under all-night light averaged 3.8 more eggs than did her sisters on 14-hour light daily.

After the first 12 weeks, production under the two systems became more or less equal.

Ryan thinks that this and similar studies could lead to the recommendation of different procedures during the early and late stages of the laying season.

Practically hundreds of other new developments were reported by poultry researchers. Here are thumbnail reviews of developments of special interest to egg producers.

Tranquilizer helps produce eggs on less feed — The well-fed layer hen of the future may be eating a tranquilizer along with her protein, vitamins, and other ingredients of modern poultry rations.

That's indicated by results of feeding a tranquilizer called trifluoperazine to pullets, in tests at Oklahoma State University. according to Quintin B. Welch.

Pullets that got 306.7 milligrams of trifluoperazine per kilogram of an all-mash ration, or about 9¾ ounces per ton, made the best showing in the test. They averaged 74.4 percent egg production, and 595.8 or .266

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pounds of feed eaten per hen daily. This compared with 73.9 percent and .290 pounds of feed, for the "control" pullets that got no tranquilizer.

Alfalfa meal increases color in egg yolk — Yolk color closely follows changes in the ration of laying hens, University of Nebraka extension poultryman Kendrick A. Holleman, revealed.

A diet containing 10 percent of high quality alfalfa meal was most effective in increasing yolk color. Xanthophyll — a yellow-orange pigment found in plants — also increased yolk color.

More hens per pen may be profitable for best producers — Top-notch poultrymen can reduce feeder and floor space requirements below previously recommended dimensions with profitable results, John Strain, Iowa State University, reported.

Restricting floor space requirements did influence production and laying house mortality in recent tests at Iowa State, Strain said. However, the extra hens in the pens with greater bird concentration offset the loss in income per bird.

Profit possibilities increased from 78 cents to $1.28 per square foot when floor space was reduced from about 3 square feet per bird to approximately 1¾ square feet for each hen. The tests also indicated that feeder space could be reduced from 4.8 inches per bird to 1.4 inches per bird with no apparent detrimental effects.

Strain emphasized that only poultrymen with above-average records should attempt these space reductions. They can't be adopted by everyone.

Additives Boost Egg Production — Two feed additives, when combined, increased egg production and feed efficiency more than either additive alone in trials at the South Dakota State College Agricultural Experiment Station.

Results of the trials were reported by C. W. Carlson. Both oxytetracycline (an antibiotic) and glucosamine (which is supposed to improve effects of antibiotics) increased feed efficiency and egg production in Leghorn pullets, Carlson said. However, greater improvement was noted when the two additives were combined.

A diplomat is one who can tell a man he's open-minded when he means he has a hole in his head.

In another study at the South Dakota State College Agricultural Experiment Station, one group of chicks receiving the tranquilizer, reserpine, showed increased

growth rate, Carlson said.

Early-Hatched chicks become more profitable egg layers — Chicks hatched in February or June proved to be more profitable layers than those hatched in September. This statement, based on three years of research, at the University of Missouri, was part of a report made by Q. B. Kinder.

Kinder's research, using February, June, and September hatches, showed hatching date affected both size and number of eggs laid by a hen. Average annual egg size was 24.4, 24.2, and 24.1 ounces per dozen, with size declining with later hatching dates. Difference in size was even more pronounced in certain seasons.

About the only thing you're sure to get just by asking for it is trouble.

The February and June hatched birds were producing eggs averaging 24 ounces per dozen after 16 weeks of production, while the September birds required 30 weeks of production to attain this size level. Yearly egg production on a hen-day basis was 220, 210, and 210 for the respective February, June, and September hatches.

Hens on Litter Lay More Eggs — Hens housed on litter (3 sq. ft. per bird) produced 7 percent more eggs than those housed on slat floors (1 sq. ft. per bird), Denis L. Osborn, University of Nebraska, reported.

The hens on the litter had 60.2 percent egg production while those on slat floors had 53 percent egg production, Denis L. Osborn, graduate assistant in the poultry husbandry department at Nebraska, told those attending the Poultry Science Association meeting.

In a six-month comparison, the hens on slat floors averaged .4 pounds less in weight than those on litter. The death rate was 7.2 percent on the slats compared to 2.4 percent on the litter, Osborn said.

Here are additional highlights: A new test developed at the University of Connecticut enables poultrymen to determine whether a poultry flock is immune to epidemic tremor disease in chicks, Roy E. Luginbuhl reported. The Connecticut researchers reported promising results in efforts to produce safe vaccine to administer to susceptible parent stock to assure immunity of their chicks.

● Most barley from the Midwest supports good growth in chicks when used at 65 percent of the ration, but barleys from the West Coast were not gener-

ally as good, O. A. Laerdal of the University of Wisconsin reported. However, it's possible to add malt or enzyme supplements that will make the West Coast barleys just as good as those from the Middle West, Laerdal said.

● Playing a radio all day and all night in the laying house increased the number of blood spots of hens' eggs, Michigan State University researchers P. G. Stiles and L. E. Dawson reported. Light in the laying house increased albumen quality and egg weight.

● The presence of vitamin C in the diet of chicken breeding stocks appeared to increase growth of such stock's offspring hatched from eggs produced during the summer, Colorado State University researcher Paul A. Thornton reported.

● It isn't wise to overfeed calcium to poultry, researcher M. R. Fedde, University of Minnesota reported. He said calcium, at high levels in the ration, can make fat less digestible. When calcium was fed at the 1.24 per cent level in the ration, beef tallow was 77 percent digestible. Increasing diet calcium to 3 percent reduced tallow digestibility to 71 percent, but decreasing the calcium to 0.33 percent increased tallow digestibility to 91 percent.

● Minnesota researcher F. R. Frank, on the basis of Minnesota research, questioned the use of extremely high fat levels in rations for laying hens in cages. One of the cage layers problems is fatty livers, which would be aggravated by high-fat diets.

What Makes Plants Grow

The plant life discovery unveiled for Soviet boss Khrushchev is privately regarded by USDA scientists as the most significant finding of its kind in *more than a century.*

Here's what they found: A previously undiscovered protein which acts as the "triggering mechanism" for all plant growth responses. It's the one single substance that has an effect on height, color, flowering time and all other plant characteristics.

Just as important, researchers have successfully isolated the protein from the plant and have learned to measure changes in it while either inside or outside of the plant. *This opens up a whole new future for development of special heights for better harvesting, influencing maturity dates, increasing disease resistance, and other yield- and quality-improving features.* —*Farm Business Service*

Santa Gertrudis Cattle

Developed in Texas, bred to withstand heat and make maximum gains on pasture, Monkey's descendants are spreading over the U. S. . . .

Condensed from Missouri Ruralist

Cordell Tindall

ONLY one breed of beef cattle ever has been developed in the United States. That breed is the Santa Gertrudis, originated on the famed King Ranch in Texas about 1920 by making an original Brahman-Shorthorn cross.

All Santa Gertrudis cattle are descendants of one bull, "Monkey," a remarkable animal that had the ability to pass on to his offspring the qualities that made him an outstanding individual.

From Texas, this new cherry-red breed of beef cattle has spread to most of the other states of the Nation and to many foreign countries, especially in South America.

The original King Ranch was partitioned in 1935. The King Ranch itself was operated by R. J. Kleberg, but part of the original herd was enlarged by Richard King. It is from this latter herd that most of the breeding females have been purchased that have gone to other sections of the country. Only bulls have been sold from the King Ranch herd.

The Santa Gertrudis were developed for range conditions in Texas. They were designed to range on dry land, to withstand heat, to make maximum gains on pasture. One of the most interesting angles to the development of the Santa Gertrudis cattle, in our opinion, has been use of a rigid standard of excellence.

In all other breeds of beef cattle, the sole requirement for an animal to be eligible for registry is that the 2 parents be purebred and registered. Not so with the Santa Gertrudis.

In this breed it isn't only the ancestry of the animal that counts, it is the qualities of the animal itself. An official inspector from the Santa Gertrudis Breeders International must personally inspect the young animals before they become eligible for registration. This inspection brands the animals with an "S", as a kind of "seal of approval."

Reprinted by permission from Missouri Ruralist, Fayette, Missouri

Earlier this year, Frank Lee, one of the inspectors employed by the association, certified a number of animals in the Estill herd in Missouri. He also visited other breeders who are just getting started.

Mr. Lee reports that some 12,000 head of cattle are approved every year, now. There are about 55,000 cows in the association. The association is a new one — organized in 1951, with headquarters at Kingsville, Texas. In fact, the Santa Gertrudis were not recognized as a breed until 1940.

Minimum age for inspection is 18 months — the animal is inspected only once during its lifetime.

Standards required for certification deal chiefly with size and conformation, altho such things as color (Santa Gertrudis red) and disposition (mild, tractable) are considered.

In checking the Estill herd in Missouri, Mr. Lee noted the size of ears of some of the animals. Chided about his preoccupation with such details, he insisted that the size of ear also indicated other characteristics, was related to bone and general conformation.

But the standard of excellence by which the cattle are judged concerns itself more with size for age and conformation. However, consideration is given to the color (solid Santa Gertrudis red) and to disposition (mild and tractable).

Here are a few considerations from the standard on conformation: In general form it is desirable the animals be symmetrical, broad, deep body, strong bone; extremely rangy or extremely compact animals are disqualified.

Small Ears Are Objectionable

Ears are to be medium to large, and drooping, small ears are objectionable.

Desirable neck has clean throat, smooth attachment to shoulder, loose skin folds. Absence of folds brings disqualification.

The crest should show evidence of a hump immediately forward of the top of the shoulder; large hump, tho, is objectionable and absence of any hump is permissable.

Other desirable qualities read much as for any other beef breed — broad, level back; smooth shoulder; broad brisket; full crops; broad, full loin; well-sprung ribs deep flanks; smooth

Maybe this will surprise you, but a recent survey shows that men outdrink women 3 to 1 when it comes to milk.

tailhead; broad, full thighs; broad, deep and full twist; medium-length legs, squarely set.

Another of the interesting features of this breed and its association is the fact that a cattleman can upgrade grade animals so their offspring are eligible for registration. A purebred is defined as a male or female with a minimum of 4 top crosses of Santa Gertrudis breeding. This means the animals are 15/16 or 94 per cent pure Santa Gertrudis. Heifers with 3 top crosses of Santa Gertrudis blood can be accredited with the association, then their offspring registered.

In other words, using a Santa Gertrudis bull on 4 generations of females makes the offspring eligible for registration, as far as blood percentages are concerned.

Bring In New Bloodlines

One thing this arrangement does is bring in new bloodlines with new genes.

The association also has several kinds of registration. Breeders who do not wish to keep individual breeding records can place one or more certified purebred bulls with a herd of cows and the offspring are known as certified purebreds.

Another classification is known as accredited — animals with less than the 4 top crosses of purebred Santa Gertrudis, and animals that do not quite meet the purebred type qualifications.

10,500 lb. Cow a "Must" For Profit

How much milk must a cow produce to show a reasonable profit for its owner?

Officials of the Canada Department of Agriculture have found the break-even point for a 20-cow herd where the operator receives five per cent interest and $220 a month for labor, requires a production of 10,500 pounds per cow.

This was determined in a study involving herds at the Experimental Project Farms at Duncan, Nanaimo and Courtenay, B.C. The production figure arrived at was almost identical with the District Herd Improvement Association average for the province.

The interest, depreciation, and cash operating costs for a 20-cow herd would be about $8,500 a year and for a 35-cow herd about $15,000.

Income would have to be large enough to cover these costs and allow for family living. —*Butter-Fat*

Good Posts Are Key To Fence Life

Posts are the foundation of your entire fence. Select them to last as long as the material you attach to them . . .

Condensed from
Western Livestock Journal
Aaron Dudley

HOW long should a fence post last? Ranchers and farmers have been seeking the answer to this for years, but it actually isn't as tough to answer as it sounds. Quite simply and logically, a fence post should last as long as the material attached to it.

A fence is an important structure on any ranch, and it should merit the same careful planning and engineering that your other buildings rate. You wouldn't build a barn or other structure on a weak, poorly planned, inadequate foundation — so why give your fence a poor foundation by inadequate posts or posts that are improperly set?

Probably no place else in the world are fences poorer or more flimsy than in the western United States. Even the so-called "backward" or "decadent" countries boast much stronger fences than most of the U. S.—probably because time and labor are so much cheaper. Stone is the favorite fencing material in many ancient countries, and it is not uncommon to see fence posts cut from solid stone.

Materials

Our ranches commonly use three classes of material for fences: Wood, metal and concrete. Availability, cost and function are the points to consider in making your selection; but agricultural economists tell us that in these days of high-priced labor it is a mistake to use cheap material. Your maintenance cost will be high.

If you're using wood posts, availability of local supply will be a big influence on the type you select. If you have red cedar, black locust or catalpa, you can expect 15-30 years service; oak and walnut will generally give 8-16 years service; elm and cypress, 4-8 years; pine, willow, ash, birch, cottonwood, maple, hickory and ironwood, 3-6 years. Don't bother with box elder, basswood, gum or bay. They may

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seem strong when green, but they turn brittle and snap easily when they dry out.

Trees have been described as beautiful plants, generally hidden behind billboards.

Before you compromise on poor quality wood posts, inquire about pressure-treated posts. We have seen a lot of these shipped to midwest and to western ranches, and the users are all highly enthusiastic. They're uniform and extremely durable, highly resistant to rot and to termite and other insect damage. They are far superior to most home-treated posts. Their cost, of course, varies widely according to distance from the treating plant and differences in freight rates. If you have a long haul, investigate the possibility of teaming up with your neighbors for a big shipment.

Taper Tops

A wood post sloped or tapered at the top is generally considered to have a longer life, as it sheds water better. You'll get longer post life, too, if you paint the tops to seal out moisture.

A variety of wood posts were treated and tested over a period of 23½ years by USDA and cost studies maintained. These studies showed that white cedar was the best buy when used untreated. Hickory posts lasted 12 years when creosoted 2½ hours but gave the lowest annual service cost when treated with carbolineum. When untreated, they lasted only 3.6 years.

Oregon State College at Corvallis says pine posts will last 15-20 years or longer when properly treated by the cold-soak method. While any pine species is easy to treat, the lodge pole pine is recommended especially. It is abundant in many timber areas and is not in demand for other uses. It can usually be bought at a reasonable figure.

Penetration

A post needs penetration of at least ½ inch at the shallowest point. Certain standard preservatives dissolved in light petroleum oils will penetrate into the sapwood of pine timbers by soaking. This method requires no special equipment, cost is usually small and posts are clean to handle afterward.

Cold-soak preservatives thus far tested and approved by the Oregon Forest Products Laboratory include the following:

1. A 5% solution of pentachlorophenol.
2. A copper napthenate solution containing 1% copper.
3. Oil tar creosote (regular coal tar creosote is too thick for cold-soaking).

"Penta" has been used most

widely, but all three have good service records. The first two preservatives are most cheaply prepared by purchasing a concentrate which is mixed with a light petroleum solvent, diesel oil being one most commonly used. Mix solutions according to directions of the manufacturer.

Procedure

Here's what Oregon State College recommends:

The bark must be completely removed from the post. Even small shreds of inner bark prevent absorption of the preserving solution. Plan your work so you can peel within a few days of cutting because drying causes the bark to tighten. A draw-knife is needed for a clean job when the bark is tight. During the easy-peeling season, a straight spade or straightened goose-neck hoe makes a good hand peeling tool.

A small treated post will last as long as a large treated post. Treat the smallest post that will meet your requirements. It takes about three times as much preservative to treat a 6-inch post as it does a 3-inch post and the smaller posts are easier to handle and cheaper. Posts 3-4 inches in diameter at the small end are usually satisfactory for line posts. Their main purpose is to support the wire. Corner and stretcher posts 5 inches at the small end and 7½ ft. long are usually sufficient when treated.

Cut in Summer

It saves labor to cut trees during the fast growing season from May 15-Aug. 1, because they peel a lot easier then.

Sound, dead pines are satisfactory, but avoid those that show any evidence of rot.

Some have meat, and cannot eat it, some could eat it, and lack it, But we have meat, and we can eat, and so the Lord be thanked.

Scottish prayer

If you are going to sharpen posts for driving, do it before the seasoning and treating period.

You will want all seasoning checks and cracks to form before the wood is treated, so the preservative can reach and penetrate all surfaces exposed by cracks. Cross-pile the timbers 12 inches above the ground on bumper logs or blocks. Pile near the treating location to save labor of handling. Season at least nine weeks to break the glaze.

Break Down Glaze

When bark is stripped by hand during the easy-peeling season, sap remaining in the wood may form a varnish-like glaze on the post. Glaze prevents penetration of the preservative. It does not

form on timbers peeled by machines or by hand tools which shave off some wood along with the bark. Glaze remains on the post until weathering breaks it down.

The usual procedure is to let posts season during the summer and stand through several fall rains before treating. Or let the pile stand throughout the winter and treat the following spring after 10 days of drying weather. One test in Utah showed that lodge pole pine posts took fine treatment when cross-piled in the open sunlight and seasoned for at least nine weeks.

Soaking

Soak the butts of posts until the preservative penetrates ½ inch or more at the shallowest point. Test by cutting a few timbers at the ground line to determine your soaking time. Examine the cuts immediately, for oil creeps out over the surface and soon presents a false picture. Rate of absorption varies according to condition of the wood; in general, pine treated during the same season as cut requires 24 hours of soaking. If seasoned over winter or longer, 12 hours. Long-seasoned dead timber, ½-6 hours. The bottom 30 inches of 4-inch post will take up to 1-1½ pints for good treatment. A 6-inch post will take up 1½-3 pints. An 8-inch post, 4 pints or more. If pines have a deep sapwood, they will continue to take up preservative beyond the above amounts. It will keep down costs if posts are taken from the solution when the minimum penetration approaches ¾ inch.

An 'unimpeachable source' is always the one that starts the rumors.

After completing treatment of the butts, reverse the ends and give the tops a 30-minute soak in the preservative solution. This may take another ½-1 pint, depending on post size. Maintain level of the treating solution in the drum or tank.

Equipment

For butt treatment, treating the lower 30 inches of the post, use a 55-gallon oil drum or a battery of them set 18 inches in the ground. For full-length treatment, use tanks a little longer than the longest timbers.

Metal posts have been coming into greater usage in recent years, as they can be installed fast and with a minimum of labor. No authentic tests of long standing are available on the comparative durability of metal posts; however, observations made at the South Dakota and Arkansas agricultural colleges showed that galvanized posts were in good

condition after 10 years, whereas painted posts had lost about 80% of their coating and were rusting badly.

Another advantage to metal posts is that they protect stock against lightning by grounding the current. They are light in weight and may be easily driven into most soils, which reduces labor. Like concrete posts, metal posts permit burning of weeds and trash in the fence line.

Most of the water used in the U. S. costs about a nickel a ton (250 gals.).

Corner Posts

Remember that corner and end posts are the foundation of every fence. If these posts are poorly erected and placed in shallow holes, the fence cannot last. Corner posts should be set to a depth of approximately one-half height of fence but never less than 3 ft.

It is best to set end and corner posts in deep concrete. Provide adequate bracing. Braces can be secured to wooden posts with steel dowels. Steel end and corner posts come equipped with the proper braces.

End posts or stretcher posts should be used at the end of every 20-rod roll of wire fence. This makes for a more durable and tighter fence. You will find that most manufacturers have special posts and anchor attachments designed for corner and stretcher purposes. They are strong, durable and resist frost heaving when properly installed.

Concrete

The hole to be dug for concrete-set steel corner posts should be approximately 16 inches in diameter at ground level and not less than 3 ft. deep (or below frost line). Use a larger foundation if you are setting the post in soft soil. Make the hole cone-shaped and larger at the bottom to prevent frost heaving.

If you have a lot of fence to build, look into the advisability of renting or purchasing a power auger or a power post driver. There are a number of excellent tractor attachments on the market and they can quickly pay for themselves. A leader in this field is the Danuser Machine Co. at Fulton, Mo., manufacturers of both a driver and a digger. In average soil, the Danuser driver will drive unsharpened wooden posts up to 6 inches in diameter and up to 8 ft. in height. In tests under practical conditions, an operator and a tractor driver have set ½ mile of posts per day. It drives steel posts at even a faster clip.

After the corner post has been set in concrete, brace blocks should be set. Holes for these

should be dug to the same dimensions as those originally dug for the corner posts and should be 16-18 inches deep if the ground is reasonably firm, otherwise larger.

In 1959, there are in the United States twice as many tractors, 4 times as many corn pickers, and 12 times as many pickup balers as there were in the year of 1945.

If you use wood posts, put in a double span horizontal brace.

Spacing

Line posts should be set approximately one to every rod (16½ ft.) on pasture or field fence and about every 10 ft. on barnyard fence. Line your metal fence posts up along your chalk line or wire, driving them with a sledge or pipe ram, power driver or other steel post driver. Under average conditions, a post should be driven about 18-24 inches into the ground. It is wise to check post alignment by eye as you are putting in line posts.

We are happier in many ways when we are old than when we were young. The young sow wild oats. The old grow sage.

Concrete posts, when properly made, will give extremely long-lasting service. Where sand and gravel are available and labor is available at a fair cost, concrete posts can be made on the ranch advantageously. Details on the making of such posts can be obtained from local cement dealers or from the Portland Cement Assn. office in your area. Success in making concrete posts depends on proper mixing, proper reinforcing and placement of the reinforcing, care in handling green posts, proper curing and seasoning before use and careful handling. Unless these principles are observed, you can get in a lot of trouble trying to turn out concrete posts. But if you get the right combination, you'll have sturdy corner posts that your grandchildren will admire.

Rules For Safe Drinking Water

Test your well at least every two years, or at the first signs of cloudy appearance or strange taste. Well casings should extend above ground, in cement, to prevent seepage of surface water, septic tank run-off and dirt. Ask your county agent or vocational agriculture instructor about water testing.

Hygromix for Sows and Pigs

What are the effects of feeding it?

Condensed from Research and Farming

A. J. Clawson, E. R. Barrick, and *J. L. Rea, Jr.*

HYGROMIX, a new antibiotic recommended as a feed additive for maximum internal parasite protection, has been under study at the Tidewater Research Station at Plymouth, N. Carolina.

Hygromix has been recommended as an additive to the creep ration and to the ration for pigs up to 100 pounds. It has been reported to be effective against the large intestinal roundworm, the nodular worm and the whipworm. Worm egg production is reported to be inhibited and the drug has been recommended as a continuous control measure when included in the diet of young pigs.

Study Effects of Hygromix

The experiment at Plymouth was set up to study the effect of continuous feeding of Hygromix to sows during the latter part of gestation, and to pigs from the time they will consume dry feed until they reach a weight of 100 pounds.

Briefly, here's what was done:

Nineteen sows from an inbred line maintained at the station were bred within one week for fall 1957 pigs. These sows were fed 3 pounds of a mixed ration daily. Thirty days before farrowing they were divided into 2 treatment groups. One group of 9 was continued on the mixed ration; the other 10 were fed 2 pounds of the same ration and another pound of it containing Hygromix added at the rate of 40 pounds per ton.

Some people complain because roses have thorns; others are glad because thorns have roses.

Half of Pigs Put on Concrete

An average of 18 days after farrowing, half of the sows from each group were placed on Ladino clover-fescue pasture and the remainder on concrete-floored pens. Hygromix feeding was continued for those pigs

Reprinted from Research and Farming, Agricultural Experiment Station, North Carolina State College, Raleigh, North Carolina

whose dams had received this antibiotic. This feeding was continued until the pigs had reached an average weight of 100 pounds.

Here is a summary of what we found out:

- Second litter sows, fed 3 pounds of concentrates daily during a summer gestation on Ladino clover-fescue pastures, farrowed large healthy litters.

- Sows and litters maintained in farrowing stalls for about 3 weeks, and then fed either on concrete-floored pens or pasture from 3 to 8 weeks, performed satisfactorily with few death losses.

- The addition of Hygromix to the creep ration of nursing pigs either on concrete or on pasture resulted in reduced feed intake and gave no apparent benefit in regard to weaning weights or survival of the pigs.

Growth Performance Not Improved

- The feeding of Hygromix in the protein supplement of weaning pigs to a weight of 100 pounds did not improve growth performance when fed either on concrete floors or on pasture.

- Pigs fed on pasture consumed less feed per day and required less feed per pound of gain than pigs fed the same type rations on concrete feeding floors.

- The intestinal tracts of pigs fed Hygromix to a weight of 100 pounds and slaughtered at average weights of 190 pounds contained fewer ascarids than the intestinal tracts of the control pigs.

- The livers from pigs fed Hygromix on concrete had fewer abscesses and scar tissue spots than the livers from control pigs. This difference in liver damage was not apparent in pigs fed Hygromix on pasture.

Pharmaceutical Milk

"Milk will be used some day as an important tool in control of virus diseases in humans," predicted the late Oscar Straube, board chairman of American Feed Manufacturers' Association. "A bottle or a carton may be labeled 'for the prevention of outbreaks of influenza and common colds.' This will be managed when goats and dairy cows are injected with influenza and cold viruses. The animals will produce antibodies in milk which will furnish protection for the consumer." —*Tractor Farming*

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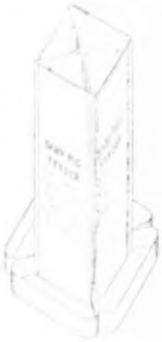

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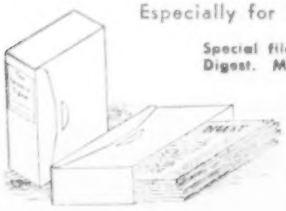

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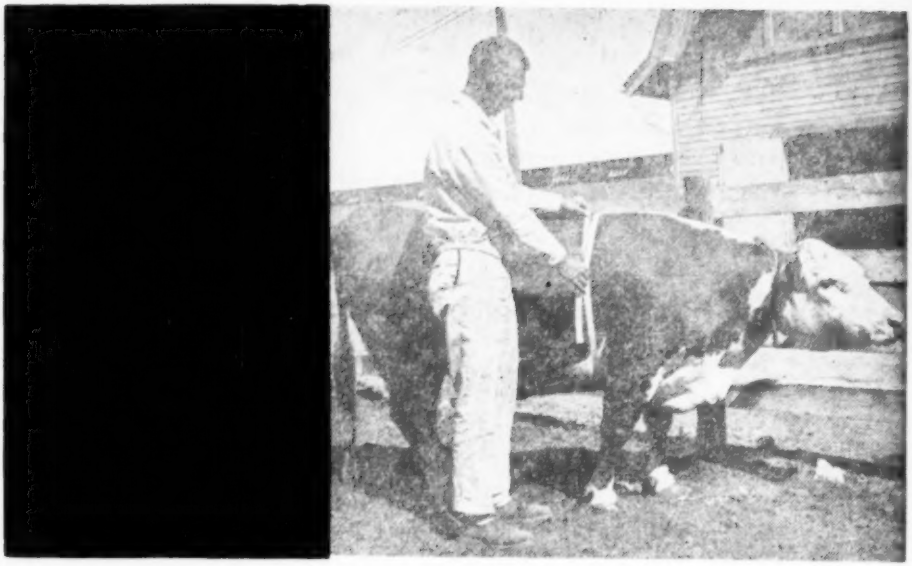
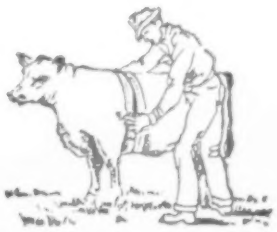
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